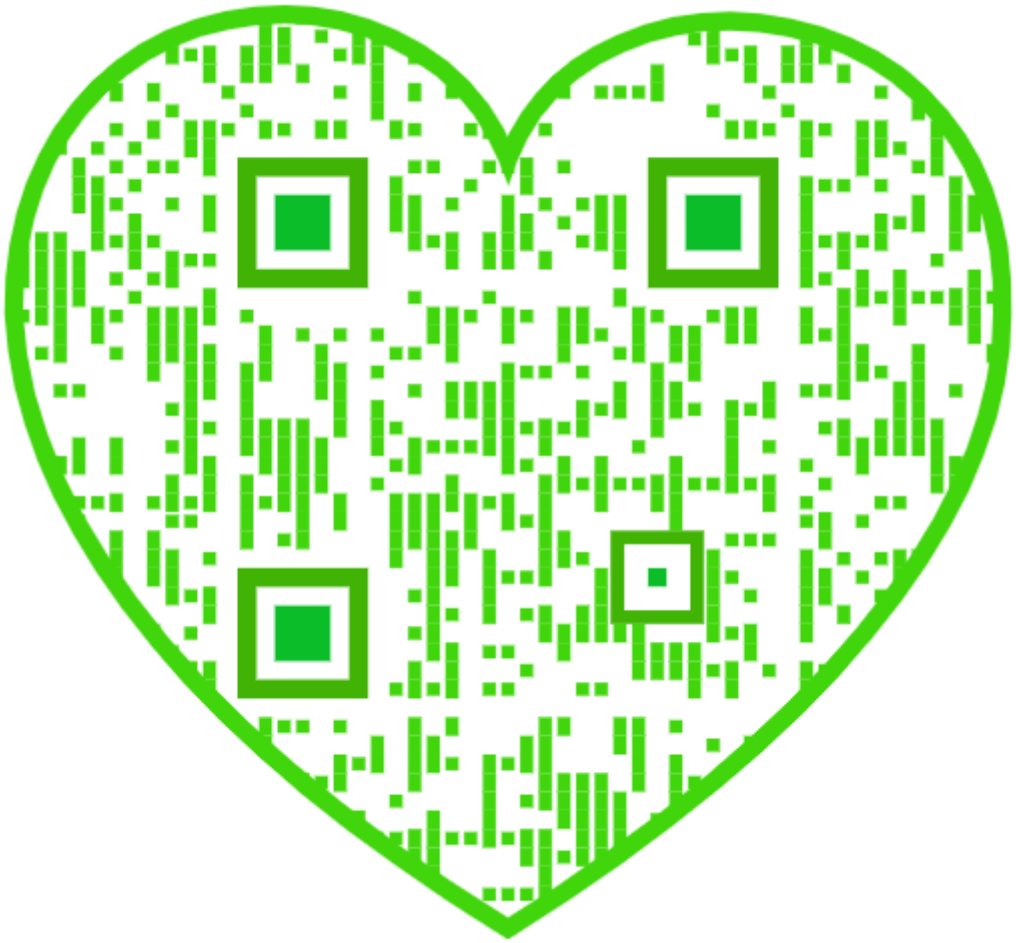
CAMP KITS & CAMP LIFE

BY

CHARLES STEDMAN HANKS



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Life in the Wilds
(Use magnifying glass to get details)

CAMP KITS

AND

CAMP LIFE

BY

CHARLES STEDMAN HANKS

"NIBLICK"

Author of "Hints to Golfers"

NEW YORK
CHARLES SCRIBNER'S SONS
1906

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I DEDICATE THIS BOOK TO THE MEN WHO HAVE BEEN MY GUIDES FROM THE TIME I FIRST WENT INTO THE WOODS, WILL AND LISH SHAW, FRED GRINDELL, JOHN HANSCOM, JOE BOUCHARD, TOMMY GERARD, GEORGE PARKS, ED HARLOW, JOE FRANCIS, FRED AND JEWETT SPENCER, SUMNER POTTER AND FRED GILMAN, AS FINE A SET OF MEN AS ONE COULD WISH TO HAVE FOR FRIENDS.

CHARLES STEDMAN HANKS

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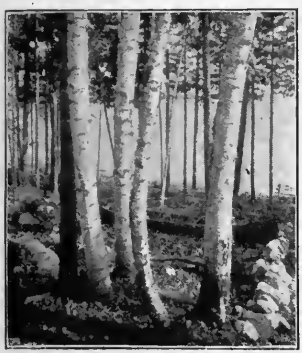
CAMP KITS AND CAMP LIFE

CHAPTER I

THE PRELIMINARY CANTER

MEN who go hunting, you will find, are divided into three classes: first, those who in a lazy way in the summer time do a little shooting when there is nothing else to do; second, those who go into the woods as soon as the game laws are off with the idea of cracking away at anything and everything which comes in sight; and third, the real hunter who goes late in the fall and is willing to suffer a little from tingling fingers in order to get a few good shots. Don't go in June or July, if you can go at any other time, because at this time black flies are a pest and keep you busy until late in the afternoon, and midges, which the Indians call "Bite 'em, no see 'em," begin their work about sunset. Don't deceive yourself that a head net will keep them off. It may do it with most of them, but those adventurous dis-



One Reason Why We Go into the Woods

coverers which get inside the net will neither let you kill them nor get out, and the net will deprive you of the use of your pipe. When you are making up your list of the things to take, keep in mind that the amount of pleasure which you will have will depend not only upon your knowledge of woodcraft but also upon being so well equipped for roughing it that the novelty of being dependent upon your own supplies and your own resources will not be offset by too many personal discomforts.

Getting Acquainted with a Gun

As it is one of the laws of give and take that cheap guns make bad shots, and as a bad shot always makes a disgusted sportsman, buy the best gun your purse will stand. There is a large variety to choose from between single-barrel shot-guns, carbine rifles, repeating rifles, repeating shot-guns, combination guns with one barrel for cartridges and the other for shells, the three-barrel guns with two barrels for shells and a rifle barrel underneath, guns opening at the breech with a side or a top bolt, and "take-down" guns, or those with the barrel held in position by a spring, these going into the gun case in two pieces, and, therefore, taking up little space when travelling.

After you have decided upon the kind of gun, the first thing to do is to pick out one that "fits." If the eye does not catch the sights the moment you bring it to the shoulder, the stock is either too straight or too bent. Then see if it balances. If it does not,

the stock is too long or too short, or the barrel too light or too heavy, some guns being muzzle light and others muzzle heavy. In other words the barrel should neither feel so heavy that it seems to be pulling down, nor so light that it does not steady itself. As the stock of a shot-gun has more drop than the stock of the ordinary rifle, many sportsmen have shot-gun stocks put on to their rifles, so that they will not have to twist their heads in taking aim, which to some extent affects the eyesight.

Many men make the mistake of choosing too heavy a gun, which is apt to make one sit down too frequently and think it over. A 12 to 16 gauge shot-gun, weighing from six to eight pounds, according to one's fancy, is right for ducks, a 30.30 carbine rifle is large enough for a deer and a 30.40 for a moose if hit in a vital spot, although many hunters believe in a larger bullet so that a larger hole will let out more blood to track the game by.

On a hunting trip take both a shot-gun and a rifle, and when you leave camp for a day's tramp, decide before you start what you are going after. If you are after birds you will want your shot-gun, if after a deer or a moose, your rifle. If, however, you are after any game which may show itself take your shot-gun with one barrel loaded with buckshot for deer, and the other with smaller shot for ducks or partridges, or take your rifle and have some of your cartridges loaded with shot.

The Parts of a Gun

"Lock, stock and barrel," was the way our ancestors in revolutionary times described a gun, and we use the same terms to-day. The lock is the steel frame in the middle of the gun and is the part which holds the stock and barrel. That part of this steel frame into which the mechanism of the hammer and trigger goes is called the receiver, and the plates covering the receiver the side plates.

Stock and Barrel

That part of the stock which goes against the shoulder is the butt, the lower part of the butt the toe, the upper part the heel, and the distance between the heel and a line continued along the barrel to a point over the heel the drop of the stock. The flattened part of the stock is the comb, the part which receives the lock the bed, and the wooden part under the barrel the shoulder or forearm..

The part of the barrel at the end of the gun is the muzzle, and the part next the lock the breech, hence the term a breech-loader. In a shot-gun the part between the two barrels is the rib. The chamber under the barrel which holds the cartridges is the magazine. The movable piece at the breech end of the barrel, which slips back when a cartridge is pumped into the barrel, is the breech-block, and the small steel rod in the breech-block which is driven against the cartridge or shell when the hammer falls, is the breech-pin or firing pin.

The hammer is the steel plunger which is driven against the firing pin to cause the concussion, and

the trigger is the lever which releases the hammer, this being protected by a curved piece of steel called the guard. The main spring is the spring which drives the hammer against the firing pin, the tumbler, a triangular piece of steel which catches the hammer at half or full cock, and the trigger spring, the spring which keeps the trigger in position.

The gauge of a shot-gun means the diameter of the barrel, a 10 gauge gun meaning that a round bullet, ten of which will weigh a pound, will exactly fit it. A choke barrel is one with the diameter smaller at the muzzle than at the breech to prevent the shot scattering, most shot-guns having one barrel choked and the other open, the open barrel being called a cylinder barrel. No gun-barrel, however, as bored to-day, is a true cylinder, every barrel being drawn in a trifle toward the muzzle like a cone. In a shot-gun, as the pellets of shot are jammed violently together just before they leave the barrel, more or less of them are "upset" or so crushed that they lose their sphericity and become ineffective, some flying off at an angle and others losing their velocity. This you will notice when firing a charge of shot over the water, as the shot will strike the water in a string from fifteen to twenty feet long. What portion of the shot is ineffective depends upon the gun, the powder and the kind of shot used; with modern guns and smokeless powder, the killing part of the load being seventy per cent. of the shot at fifty yards, thirty per cent. dropping to the ground or not flying true. To prevent as much as possible shot losing

their sphericity and becoming ineffective, they are now made hard by chilling them.

The Sights

Of the different kinds of sights some are only used for target practice and others only for hunting. The common muzzle sights are the Rocky Mountain sight, a long strip of brass rounding up from the barrel, and running lengthwise with it; the knife blade sight, a strip of ivory or German silver similar in shape to the Rocky Mountain sight; the clover leaf sight, shaped something like a clover leaf; the pin head sight, a small brass knob on the barrel; the peep or globe sight, a small disk in the centre of a steel cylinder; and the Lyman ivory bead sight, a sight especially good for quick shooting in a poor light. The common breech-sights are the peep sight; the ratchet sight, a sight regulated by moving a ratchet back or forward on notches on the barrel; the buck horn sight, a rounded sight shaped like a buck's horn with a notch in the centre; Lyman's folding leaf sights, or two sights which fold over to give different elevations; Lyman's combination sight or a sight which raises and lowers on a screw; and Lyman's receiver sight, a cylinder sight close to the hammer to aid one in getting the other sights quickly.

Suggestions About Sights

See that the breech-sight is set well forward so that you can see it clearly in order to shoot accurately.

Although many sportsmen use peep-sights when hunting, open sights are far superior for quick shooting in a dim light.

Remember that no metal shows so well in different lights as ivory or white agate. If you use an ivory sight be careful not to get any oil on it when cleaning your gun as this takes away its lustre.

Remember when shooting game that there is seldom more than a few inches to spare above and below the mark, but several inches along the horizontal line. The top of the front sight, therefore, should be flat, as a flat front sight does not mean any sacrifice of accuracy on the vertical line, the best front sight being a bar about as thick as the head of a pin with the back edge slightly sloping.

Remember that the use of the back sight is to cut off enough of the front sight to give the right horizontal range. Getting the vertical range is child's play compared with it. For quick shooting, therefore, the back sight should not be obstructed by any sides or horns like the buck horn sight, a straight, short bar without any slope or notches being the best kind. With this kind of a sight you will, instinctively, get the centre for the vertical shooting line when you raise your rifle. If you need a notch cut a line with your knife in the centre of the bar.

Remember that lifting the back sight forces the breech down, which makes the gun shoot higher; that lowering the back sight makes it shoot lower; that lowering the forward sight makes it shoot higher; that moving the breech-sight from left to right makes

it shoot further to the right; and that moving the front sight from left to right makes it shoot to the left.

Remember that all front sights and leaf sights are driven into the barrel slot from the right-hand side.

Cartridges and Shells

A cartridge, as we all know, is the metallic case, or the burr as it is often called, which holds the powder and bullet, and a shell the pasteboard case which holds the powder and shot, the different parts of a cartridge being the percussion cap, the powder or primer and the bullet; the different parts of a shell being the percussion cap, the powder, two or three wads of felting or cardboard, then the shot, with sometimes a wad between each layer, and then a wad of cardboard.

The size of the shot in a shell is designated by numbers or letters on the outside of the shell. Large shot, which are known as buckshot, are numbered according to their size from zero to eight, the zero number meaning that there are three buckshot to a layer and three layers, number one meaning that there are four buckshot to a layer and three layers, and the other numbers indicating still smaller sizes.

Shot smaller than buckshot are known as chilled or dropped shot. The largest, which is numbered 000, is a little smaller than the smallest buckshot, the next sizes being 00, 0, BBB, BB, B. After this they

are numbered from one down to twelve, number one being used for geese, number two for foxes, number three, four and five for duck, number six, seven and eight for partridges, number nine and ten for snipe, peep, and smaller birds, and number eleven and twelve for small birds to be stuffed, these being known as dust shot.

Cartridges are numbered according to the diameter of the bullet, its weight and the amount of powder used, a 32-40-185 cartridge meaning that the diameter of the bullet is 32-100 of an inch in its widest part, that the powder weighs 40 grains and the bullet 185 grains. A 32-40-185 rifle, therefore, means that the barrel is made for a bullet with a diameter of 32-100 of an inch, and that the bore of the barrel is such that 40 grains of powder, acting on a bullet weighing 185 grains, gives to the bullet the proper twist or spin to keep it "front on" to the limit of its range, thus insuring the best possible accuracy, as too slow a twist makes the bullet tumble or duck as it is called, and too quick a twist makes it so unsteady in its flight that it wabbles.

As the velocity of a bullet depends largely on its shape, and its killing power upon the softness of the lead, many different kinds of bullets are made. For long range accuracy, a long bodied bullet is indispensable, and a round ball made of soft lead is the one which flattens the best when it strikes. These soft lead bullets are known as mushroom bullets, some being made to flatten by having holes bored into them, some by being hollow, and some by having

narrow steel bands around them to flatten the head of the bullet on. Other bullets are express bullets or those with long bodies and fired with an enormous amount of powder, these getting their killing power from the velocity with which they strike; explosive bullets or those which have explosives of some kind in them which make them fly to pieces when they strike; and patched bullets or those which are covered with thread, parchment, linen or other thin material, which is smeared with tallow to make them carry more accurately.

The Trajectory or Flight of Rifle Bullets

From the instant a bullet leaves the muzzle of a rifle until it strikes the target it moves in a curved line, although for some distance no deviation from a straight line can be detected. This curved path which the bullet describes is called its trajectory, and is due both to the upward motion which the resistance of the air gives it and to the downward motion which it gets from the force of gravity, the downward motion only showing itself when the velocity of the bullet begins to die away. Because of this upward curve of a bullet there is, therefore, in some portion of its flight a time when it is outside the range of the sights. With the mid-range height of the trajectory known, namely, the height which a bullet flies above the straight line between the muzzle of the rifle and the point where it strikes the target, the distance which a rifle will shoot without allowing for the rise

of the bullet can be ascertained. This killing zone of the bullet is called "the natural point blank" of the rifle, or the natural line of sight. When black powder is used this natural point blank is much less than is commonly supposed. With many rifles it is not over fifty yards, and probably does not exceed one hundred and thirty yards with any rifle. Every one, therefore, when using black powder should find out just what the natural point blank range of his rifle is. In addition to this natural point blank there is, of course, another killing zone where the bullet in falling is again on the level of the line of sights. This is called the "artificial point blank," and varies according to the distance which the rifle sends the bullet. It is, therefore, when the distance is between these two point blanks that one has to estimate how much to raise his gun, and it is in this range where so many misses come either by undershooting or by overshooting in attempting to avoid undershooting.

If the speed of the bullet can be increased, or the bullet, by its shape, can be made to retain its speed for a longer distance, the greater, of course, will be the distance which it will go before it begins to curve enough to overshoot. As increased velocity can be given a bullet by using smokeless powder, because it has a tremendous initial velocity, cartridges are now made so that the power is concentrated on the first hundred and fifty yards, which is the practical limit of all ordinary shooting. It is not, therefore, necessary when shooting with smokeless powder within this limit to consider anything but the natural point

blank, or the line of sight of the rifle, as the speed of the bullet is so great that it rises but little.

Smokeless Powder

One must keep in mind that nitro or smokeless powder and black powder have entirely different qualities; that nitro powder is a chemical compound, and black powder a mechanical one; that black powder will stand a certain amount of pressure with safety, but that the slightest compression of smokeless powder is liable to develop so much force that it explodes. Be careful, therefore, when extracting a cartridge or shell which has smokeless powder in it, not to compress it or it may cause an accident.

Remember, too, that nitro powders are subject to changes which depend upon the conditions which surround them, and that these changes affect their explosive qualities to a greater or less extent; that if kept in a dry place they lose too much moisture, and if kept in a moist place they gain too much, and in either case burn so slowly that they are apt merely to throw the bullet or shot out of the barrel. Therefore, if you use smokeless powder see that your cartridges and shells are newly made.

Remember that with the best smokeless powder a bullet has a muzzle velocity of 2,200 feet a second, a muzzle energy of 2,685 pounds, an energy of 1,500 pounds at two hundred yards, and a trajectory of less than five inches for this distance. It is this tremendous velocity which gives to soft nose or mush-

room bullets their great smashing force, which upon impact with the softest animal tissue flatten out into more than double their size. It is, therefore, because of the punishing power which smokeless powder gives to small bullets that large calibre rifles are being discarded for smaller and lighter ones.

The Gun and a Novice

Remember that you must have more than a bowing acquaintance with your gun, and that taking good care of it is as important as taking good care of your horse. Never let it remain foul over night. Swab it out with a dry rag, then give it a good rubbing with cotton flannel soaked in sperm oil or a good gun oil, and finally give it a rubbing with dry chamois. Use raw linseed oil on the stock, and never use anything but porpoise jaw oil, and that sparingly, on the locks. Don't meddle with the locks too often. Too much oil is apt to gum them. If you get caught in the rain or snow, and your gun gets wet run a rag down the barrel as soon as you get back to camp, as the inside of the barrel is liable to get rusted if it is allowed to dry when wet. The lazy man's way is to fire a charge through the barrel, and in this way take out the dampness. After cleaning your rifle, slide the breech-block back, and put a strip of white writing paper in the opening so that the light will reflect down the barrel, or use a mirror which is made for the purpose. In this way you can see if the barrel is clean.

The Cleaning Rod

Wet powder dirt can generally be taken out with a dry rag, and dry powder dirt will generally yield if you breathe into the barrel. Don't believe the man who says never pour water into a gun. There is absolutely nothing which takes hold of powder dirt like it. If the gun is well wiped with a rough cloth afterward, there will be no danger of its rusting.

Clean your gun with a hickory rod having a notch in the end of it so that a heavy wad of cloth can be used without jamming, but never have this wad so tight that the rod has to be driven against something solid to force it through, as this affects the choke of the barrel.

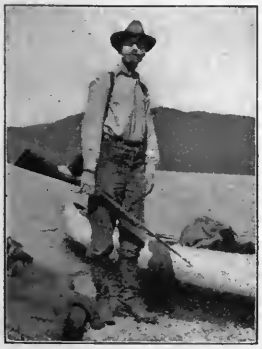
Never use buckshot in a choked barrel, as the shot are so large that they are apt to flatten in getting through the choke of the barrel, which makes them scale when going through the air. There is also a liability of the shot jamming and the gun exploding.

A Reminder of Wood Life

CHAPTER II

THE MAN BEHIND THE GUN

THE ordinary way to fire a gun is to bring it against the shoulder, but a quicker way is to bring it into the crook of the arm, having the elbow nearly on a level with the shoulder. By keeping the other elbow also well up the gun is balanced with the body, and there is not the same liability of its swaying as when held against the shoulder. In firing in this way you will have to learn to hold your head well back when you take aim, otherwise your eye will be close to the hammer, and if the gun kicks there is the liability of an accident.



Ready for Business

When firing with a rifle you should stand with the weight of the body equally on both feet, but when firing at birds on the wing with a shot-gun you should stand well forward with the weight of the body on the left foot, so as to be able to pivot easily and also to take up the recoil with the right leg.

Gun Shyness

Every novice is at first gun shy, and either holds the butt of the gun loosely against his shoulder, or closes both eyes when he fires. Another trick of the novice is to let the muzzle drop as he pulls the trigger, or to pull the trigger with a jerk which swings the barrel to the right. This flinching you can prevent by pulling the trigger with a slow, steady movement so that you will not be able to tell when the hammer is coming down. If you are using a rifle do this by gradually tightening up the hand, and although the hand itself will not move, being on the trigger guard, the forefinger will draw up enough on the trigger to pull it. If you are using a shot-gun rest the tip end of your forefinger loosely but firmly on the trigger so that the finger can slip quickly from one trigger to the other.

When taking aim hold the gun with the left hand well down the barrel so that the gun will have a better balance. By doing this the gun can also be brought more easily on the mark.

Never hold your head so that your nose is against your thumb. If the gun recoils you will remember it and will probably flinch the next time you fire.

Never hold the gun against the muscles of your arm.

Remember that the farther your eye is from the back sight the less will you be troubled with any reflection of light from its edges, and the clearer, therefore, will be its outline.

If you jerk your gun up to your shoulder the temptation to fire when the front sight first glimmers

on the mark is almost irresistible, and you will fire with too quick or too vague a sight. If, however, you will raise your gun deliberately and look for the sights as the gun comes up, it will require no readjustment or shifting of the gun afterward.

Learning to Aim

Learn to shoot with both eyes open. By using both eyes you will see better than with one eye closed and will shoot quicker, as the left eye has only to see the quarry, and the right eye to bring the sights on to the quarry. As each eye is acting independently there is also a sharper picture on the retina, the same as when looking through a stereopticon. Using both eyes, however, is not the easiest thing to do if you have been accustomed to close one eye. At first you will see two targets, two forward sights and probably the side of the gun-barrel. This is because the mind is concentrated upon the sights, and the left eye instead of being focussed on the target glances across to the gun-barrel. Until you can overcome this instinctive habit close the left eye and after sighting with the right eye open the left eye, doing this until the left eye is able to focus itself on the game. After you can do this bring the gun to the shoulder, take aim at some object with both eyes open, and then, closing the left eye, see with the right eye whether the barrel is pointing true.

In taking aim nothing should be seen but the two sights and the object aimed at, the forward sight ap-

parently being at the breech of the barrel. If you see the barrel of your rifle or the rib of your shot-gun you will overshoot your game.

Remember that the most common error in aiming at any object is catching too much of the front sight and overshooting.

Learn to take aim as you raise the gun to your shoulder. This will bring the sights more quickly on the quarry than if you raise the gun above the game and then have to lower it across the line of vision.

When you have learned to bring the sights on the mark quickly, learn to aim without using the sights. This can be done if you will practise it long enough to make the precision in bringing up the gun automatic. The test of this kind of shooting is in being able to take good aim with both eyes closed, or in other words to do it instinctively, as you will have to if you expect to be a crack shot. Shut both eyes and try it. Throw the gun up, and the moment you feel the butt against the shoulder open your eyes, and see where it is pointing. Keep up this practice until you are able to get a bead on any object whether it is above you, below you, or on the same line with your eye. After you have caught the knack get behind the barn and try it with your gun loaded. Stand thirty paces away, and hold the gun with the muzzle at an angle of 45° to the ground. Fix your eyes on the target, and after shutting both eyes bring the gun to your shoulder and fire with both eyes closed. When you are able to hit the target you have mastered the art of firing, but do not be discouraged if

you use up tons of lead before you accomplish it. It is this kind of ability which makes one able to drop a moose when it is too dark to see the gun-barrel.

Don't wait until you get into the woods to do your target practising. Before you leave home, get out on the side of a hill; hit it a few times, and then pace off a hundred yards range, a two hundred yards range, and a three hundred yards range. Put a few bullets into the hundred yards range, then into the two hundred one, and then into the three hundred one. This will give you a practical knowledge of distances. Now get near one of the targets and run away from it. Pay no attention to the distance, but when you have gone somewhere between fifty and two hundred yards, swing round and fire at the target, doing this standing, kneeling, sitting and lying down. Such practice calls for quick action in estimating distances, a thing which few sportsmen are able to do correctly, as overestimating distances and shooting higher than is necessary is the one great fault in deer shooting. When you are able to hit the target with this kind of practice you are ready to pack up for the woods, and you will stand a fair chance of bringing home some game.

Remember that there are two ways of shooting birds on the wing or game on the run. One is to bring the gun up to the shoulder, and at the same moment pull the trigger; this is known as snap shooting. The other way, known as open shooting, is to follow the bird or the game with the gun, and fire while the gun is moving.

Shooting Ahead

When aiming at birds on the wing it is often necessary to shoot ahead, and in deciding how far ahead to shoot you must have some idea not only how fast your bird is flying, but also how far the bird is from you. You must also know how fast your shot will travel, which depends upon the quality and the kind of powder used, the amount of powder, and the kind of shot in the shell. Remember that $4\frac{1}{2}$ drachms of black powder behind No. 8 shot give a mean velocity of 800 feet a second, and that common smokeless powder gives a mean velocity of 1,200 feet a second. The solution, therefore, of the question is a mathematical one. When you are shooting, however, there is only time for a glance and a thought, and the question of distance and velocity must be known instinctively. This instinctive habit one can only get by practising on birds themselves. One can, however, get a certain amount of proficiency in estimating distances by looking at different objects, and after deciding how far away they are, pacing the distance; and an intuitive knowledge of the speed of birds by shooting at clay pigeons.

Suggestions About Wing Shooting

In shooting at clay pigeons go at it in a business way. Know definitely how far the trap is from the stand, and at what velocity it is set. When you fire keep in mind how you have aimed, and if you bring down your bird pace off the distance. With this sort of practice you will soon be a fair, if not a crack shot at the real thing.

If you have a friend who will practise wing shooting with you, go with him to some field, and while one of you from behind a boulder throws small paper bags filled with flour and weighted with stones into the air, the other should try to hit them before they fall, picking the gun up from the ground after a bag is thrown into the air.

Remember when you swing your gun on to moving game, and then fire, that you fire ahead without suspecting it, for while the brain is giving the order to pull the trigger, although the time is imperceptible to the senses, the muzzle of the gun is still moving forward.

Bear in mind that a bird which flies 5 miles an hour flies 7.3 feet a second; that one which flies ten miles an hour flies 14.6 feet a second; that at 12 miles an hour it flies 17.5 feet a second; at 40 miles an hour it flies 58.4 feet a second; at 60 miles an hour it flies 87.6 feet a second; at 90 miles an hour it flies 131.4 feet a second; at 100 miles an hour it flies 146 feet a second, and at 120 miles an hour it flies 175.2 feet a second. Remember, too, that mallard and black ducks fly from 40 to 50 miles an hour; pintail and wood ducks from 50 to 60 miles an hour; widgeon and gadwall ducks from 60 to 70 miles; canvas-back ducks from 80 to 120 miles; wild geese from 80 to 90 miles; and hawks from 40 to 150 miles.

Things Not To Do With Your Gun

Never stand your gun on the butt unless there is something on the side of it as well as behind it for it

to lean against. Never, therefore, lean your gun against a tree unless it can also lean against a branch of the tree so that it cannot fall over.

Never get over a stone wall and then pull your gun over after you. Put your gun over first, and don't have the muzzle pointed toward you when you get over.

If you are at a shooting range, break your shotgun while the others are shooting, and only close it when your turn comes. Break it also when you go into the club house for luncheon.

Never carry your gun with the hammer on the firing pin. If you stumble the gun is apt to go off, not because the hammer gets pulled back, but because it strikes against something hard enough to make the concussion explode the primer. If you carry it at half-cock this can never happen.

Never carry your gun with the hammer at full-cock, not even if you are sure that game is ahead of you. Until you are ready to sight your gun on the game hold your thumb on the top of the hammer, and your forefinger on the trigger, only cocking it as you bring it to the shoulder. With a little practice you will be able to do this long before the gun gets to the shoulder, and if you get into the habit of only cocking it as you bring it up there will be little liability of an accident.

The most dangerous way of carrying a gun is over the shoulder by the barrel. If you stumble, the leverage on the gun is apt to swing it over so that the muzzle will be pointed toward you, and if the ham-

mer strikes a stone and the gun goes off you will get the charge. Last year a guide shot himself through the lungs in this way. It sometimes happens, too, when carrying a gun on one's shoulder by the barrel, that the hammer catches on a branch of a tree, which

Steady!

pulls the hammer back, and if the gun is discharged and some one is ahead of you there is the possibility of an accident.

Never put your gun in the bottom of a canoe. If anything strikes the hammer the gun may go off and be in just the position to take off a leg. If you have the bow paddle lean your gun against the cross-bar in front of you with the muzzle forward, and if you have the stern paddle rest it against the crossbar behind you and pointed backward. If you are in the centre of the canoe lean it against the cross-bar

in front of you and the thwart and pointed over the side.

In pushing through a thicket don't carry your gun at your side, as the trigger is apt to get caught on a branch. Put your left hand over the trigger guard, your right hand on the barrel, and push your way through with the gun in front of you.

CHAPTER III

THE WANGAN

EVERYTHING you take with you into the woods, except your guns and the canoes, is known as the wangan. It includes your clothing, all articles for personal comfort which you take along, the cooking kit and the provisions. This outfit should be neither expensive nor bulky. The first thing to do is to get from a sailmaker a waterproof canvas bag, a little larger than a meal bag, to carry your personal luggage in. This bag should be round on the bottom, with a strap sewed across it for a handle. The top of the bag should have in it grommets six inches apart to run a short iron rod through when the bag is closed. This rod should really be two rods linked together, one long enough to go through the grommets, and the other rounded so that it will make a handle after being padlocked through the shorter one. Such a

The Wangan Bag

bag, which is similar to a duffel bag, you will find easy to pack over a carry and convenient to stow away in a canoe. If you do not care to get such a bag get a waterproof navy bag.

The Clothing to Have

Do not take too many things. The more simply you dress the better. Four pairs of woollen socks, two gray flannel shirts, two sets of woollen underwear, a suit of woollen pajamas, an extra pair of trousers, a woollen sweater that buttons up like a cardigan jacket and has pockets in it, and your coat and waistcoat are all the clothing needed. This will give you dry clothes to put on when you get wet, and having a duplicate set there will always be an opportunity to do the necessary washing. The best sort of a hat to wear is an old soft felt one, either gray or black, with a moderate brim which will shed the rain. If you get one a size too small and rip the lining out you will find that the felt will cling to your hair enough to prevent the hat being brushed off by branches when going through a thicket. If you go into the woods after cold weather has come you will need two more pairs of woollen socks, another sweater large enough to go over the first one, and a cap with ear flaps instead of the felt one.

Your sweater will be one of the most important articles you will take, as it is cool in warm weather, and warm in cool weather. Do not, however, take a red one with the idea that this color will prevent

anybody shooting you, as a person is not shot after he is seen, but because in going stealthily through some thick growth he moves the branches, or makes enough noise to make some other hunter think that game is there. The disadvantage of a red sweater is that red is a color unknown in the woods, and at once attracts the notice of game. Backwoodsmen, who used to wear red leggings, found this out when hunting deer. On the other hand, do not take a white sweater unless it is in the winter time or wear a white handkerchief around your neck, as some sportsman may mistake it for the white flag of a deer, if seen through an opening in the trees. A deep gray, black, or dark blue sweater is the best color to have, as it neither attracts the attention of game nor makes you a target for any one else. For clothes a black and white mixture gives the best color.

The Other Things

It is always perplexing to decide upon the other necessary things, and one's most valuable knowledge of woods' craft is knowing what can be dispensed with. The things which come under the head of necessities depend wholly upon a man's temperament, and those things which one man thinks essential to his comfort would be the first ones which another man would take off the list. If you play the game fairly you will depend but little upon the ready-made of civilization, and will have enough courage to trust to the wit made of the forests. Just what to take

you will only know after you have camped out several seasons. Each year your list will be smaller, and each year you will take more chances that you will not need many of the things which you once thought you could not get along without. For this reason a man will never accept advice about his kit or admit that another man's kit is better than the one he has packed for himself.

Take four handkerchiefs extra large and blue in color, so that they can be worn as neck scarfs, or used for slings, game decoys and even pack sacks. Take a pair of moccasins and a medium weight gray army blanket, some thread, needles, buttons, a pair of scissors, a pocket comb in a case, a tooth brush, two towels, a small rubber pillow, a folding mirror, a note book, with a place for a pencil in the back, two pipes and plenty of tobacco. Depend upon the sun for the time of day, and leave your watch at home. Never take postage stamps, envelopes, ink or pens. Stamps and envelopes get gummed together, and the ink is sure to make a map on your clothing. Take postal cards and lead pencils instead. Don't forget to take toilet paper, a compass, and a waterproof match safe. Never use this match safe if you can get matches anywhere else. Keep it on tap for an emergency, and make it a rule never to leave camp without it.

Don't forget a hunting knife. This you should always carry. You don't know when you may be caught out over night, and with a knife and matches you can always make yourself comfortable. If you

should happen to drop a deer deep in the woods late in the afternoon you may need the knife to spot your way back to a tote road, or to some stream or pond, for you will find, if you do not spot out a trail, that it will not always be easy to find the street and number when you go back for the deer. Don't forget oil for your gun, a short-handle axe, a whetstone to sharpen your knife and axe on, and some soft solder to mend any leaks in your cooking outfit. Take also a ball of marline twine, a small saw with the teeth set for green wood, and a few nails. Twine is always a necessary thing in camp. The saw you will often want to saw a stick off square with, and when you need a nail nothing else will take its place. Take also a canvas knapsack, as it is a handy thing to have in making carries, and a convenient thing to carry a cooking kit in when you are going to be away from camp for the night, as it leaves your hands free. A pair of light-weight field glasses and a magnifying glass you should also have. The field glasses will help you sight game, and the magnifying glass will get you in closer touch with nature while you are waiting on some feeding ground. If you are a true lover of the woods and have taken these along you will, before you know it, be a sportsman-naturalist. As most men get rattled if there is an accident in camp, have as a part of your wangan a small accident case. Take also a medicine case especially prepared for camp life. With these there are always printed instructions what to do.

If, however, when you push your paddle against

the shore you are leaving civilization for an exploring trip through the wilderness—to be a *voyageur*, as the French Canadians call it—leave all these extra things behind except the moccasins, blanket, compass, waterproof match safe, axe, hunting knife, whetstone, comb, handkerchiefs, tooth brush, towels; and instead of the medicine case take some surgeon's plaster, quinine pills and Turkish rhubarb for a laxative.

You will want two tents—one for yourself and your companion and the other for your two guides and the provisions. If, however, you have the right sort of guides they will have their own tent. Waterproof tents, 10 by 10, with four-feet walls, are the most practical. As a good tent is a luxury and a poor tent an abomination, get them of khaki duck. They are more restful and less glaring to the eye than white tents, are cooler to sleep in, do not soil so easily, and flies and mosquitoes do not come inside of them as they do in the white tents. In order to get a circulation of air have in the back of the tent a good-sized opening covered with a flap which can be tied down when it rains. Have also pockets sewed along the side walls to put small articles in. If you do the thing right you will have a double fly for your own tent. This will keep the rain off the roof canvas, and, as it extends for the same distance in front of the tent, it not only makes a good lounging place, but an ideal place for the dining table. Never take tent poles or tent pins, which in a wooded country only mean a clip of the axe to obtain. If you take a floor cloth to keep out the dampness, an oil cloth for your

dining table, and some mosquito netting, even the animals will look with envy at the luxurious way in which you live.

A camp stove is also a thing not to be laughed at, as it will heat your tent in cold weather and in pleas-

Ready for the Wilds

ant weather will keep things which have just been cooked warm until they are ready to be served. Then, too, as it is no fun cooking in the rain, you can cook with it in the tent in rainy weather. You will also need a rubber blanket to put over your luggage when you get caught in the rain and to spread over your bough bed when you make a temporary camp

for the night. If you get one cut in the middle you can also use it as a coat when you are out in rainy weather. A rubber air cushion to put on your shoulders when toting a canoe is another useful thing to have. It can also be used to sit or kneel on when you have a long paddle before you. If, however, you are to be a voyageur, take instead of the khaki tent a 7 by 7 lean-to tent made of balloon silk and leave all these things behind except the rubber blanket.

The Cooking Outfit

The best cooking kits are those especially made for camping, as the dishes nest into each other and take up little space. If you do not take one of these kits take a two-quart coffee-pot riveted where the joints are soldered, a three-pint teapot with the nose blocked out of the side and a strainer in it, three frying-pans with hinged handles so that they will stow away easily, the handles being made hollow or having rings in them to run a stick into so that there will be no necessity for the cook getting cooked. Take also covers for the frying-pans and a folding baker with two baking-pans, this when folded up being only an inch thick, ten inches wide and sixteen inches long; six knives, six forks, and six spoons, a mixing spoon, a cook's fork, a griddle fork, eight tin plates, eight tin cups, a wire broiler, three four-quart tin boiling pails with covers, a ten-quart zinc pail for a water-pail and eight small tin pans which will fit in-

side each other and hold about a pint each. Some sportsmen also take a cooking range, or four flat pieces of steel two feet long to do their cooking on.

Have all your tin-ware stamped out of extra heavy block tin, as camp fires play havoc with solder. Don't let any one persuade you to take aluminum

The Cooking Kit

dishes, as they get too hot, hold the heat too long, and are easily bent out of shape.

Don't think it prudish to have silver-plated knives and forks. They cost but a trifle more, and steel knives and forks are sure to get rusted the best you can do.

If you are to be a voyageur only take two tin pails, one frying-pan, four cups, four knives, four forks and four spoons.

Provisions to Carry

When Lord Lytton wrote, "Civilized man cannot live without cooks," he did not have in mind living in the woods where the simplest fare has a relish which no *chef* can improve. Even in the woods one wants a variety of food, and no one but a tenderfoot any longer thinks that being comfortable is being effeminate or that roughing it means putting up with hardships. Don't, therefore, be a martyr and suffer discomforts if they can be avoided because some one may think you have no sand. As you will get by shooting and fishing the larger part of what you eat, enough groceries for two men and two guides for a month will be:

75 lbs. of self-raising flour,
20 lbs. of self-raising graham meal,
6 lbs. of Indian meal,
6 lbs. of oatmeal,
4 lbs. of pea meal,
6 lbs. of cracked wheat,
5 lbs. self-raising buckwheat,
2 lbs. of baking powder,
10 lbs. of granulated sugar,
10 lbs. of brown sugar,
3 lbs. of rice,
8 three-pound cans of preserved butter,
2 one-pound cans of tea,
6 one-pound cans of ground coffee,
5 lbs. of hardtack,
2 lbs. of cocoa shells,
3 lbs. of seedless raisins,
4 qts. of dried peas,
8 qts. of beans,
4 lbs. of evaporated apricots,
5 lbs. of dried apples,
4 lbs. of prunes,
3 lbs. of ivory soap,
1 lb. of spermaceti candles,
3 lbs. of salt,
1 package of black pepper,
1 can of ginger,
1 ounce of nutmeg,
3 strips of bacon (about fifteen pounds),
2 lbs. of macaroni,
4 one-pound boxes of boneless codfish,
4 one-quart jars of mustard pickles,
4 one-quart bottles of olives,
1 bottle of celery flavoring,
1 bottle of curry powder,
2 five-pound jars of cheese,
2 doz. cans of evaporated cream,
1 doz. cans of condensed milk,
6 cans of pears,
6 cans of succotash,
6 cans of baked beans,
6 boxes of sardines,
1 ten-pound box of smoked halibut,
1 gal. of molasses,
1 quarter-gross box of matches in a tin box,
3 five-pound pails of lard,
1 twenty-pound sugar-cured ham.

See that your grocer puts the provisions which are not in cans in canvas seed bags, tied with marline, and that he marks each bag with a blue pencil. These bags you can get at any seed store. See also that he gives you prepared flour, prepared graham meal and prepared buckwheat, so that it will only be necessary to use water when cooking them. Many guides, however, prefer not to have self-raising flour and meal, as they will not rise if they have been long put up. If you do not take the prepared flour and meal take an extra pound of baking powder. If you take with you beans for baked beans have your grocer give you new beans, as they bake more thoroughly and have a better flavor than old beans. See also that he gives you the old-fashioned sulphur matches, as they are the cheapest to buy, make no noise when you light them, and pack away better than the others.

At the place where you leave the train get two bushels of potatoes, fifteen pounds of salt pork, half a bushel of onions, a fifteen-dozen case of eggs, three lanterns for candles, as you will want a lantern for each tent and one for general use, and when eating time comes after dark you will want all three on the table. Get also a wooden cracker box, and have some holes bored through the sides to put rope handles in. This box will just fit between the thwarts of your canoe, and you will find it a convenient thing to have in camp for a larder, and to stow things in when you change camp.

These provisions at wholesale prices should not cost over fifty dollars. By leaving out the butter,

eggs and other luxuries this can be cut down one-half.

If you are to be a voyageur only take twenty-eight pounds of flour, twenty pounds of salt pork, one pound of tea, eight pounds of beans, ten pounds of sugar, eight pounds of rice, four pounds of prunes, four pounds of raisins, five pounds of oatmeal, and some matches, pepper, salt, and soap, which will weigh about a hundred pounds.

Packing the Wangan

We have now the proper outfit for two men and two guides for a month in the woods, and in packing up do not make the different packages too heavy. Sixty pounds is all any one can carry, and it is better to make two and even three trips than to get tired out by carrying too much at once. The clothing and the things brought along for comfort will go into the two wangan bags and should not weigh over fifty pounds each. Have the flour put up in two waterproof bags. Put the graham meal, Indian meal, oatmeal, pea meal, cracked wheat, and buckwheat into another waterproof bag. This will weigh fifty-five pounds. Put the sugar, baking powder, rice, tea, coffee, cocoa, nutmeg, ginger, pepper, curry powder, and celery flavoring into another waterproof bag. This will weigh fifty pounds. Put the dried peas and beans, macaroni, salt, hardtack, raisins, dried apricots, apples, and prunes into a meal bag. This will weigh fifty-six pounds. Put the butter, cheese, and bacon into another meal bag. This will weigh fifty-

nine pounds. Put the soap, candles, pickles, olives, codfish, halibut, sardines, and the ham into another meal bag. This will weigh fifty-seven pounds. Put the salt pork and the canned baked beans in the bag with the onions. This will weigh fifty-nine pounds. Put the other canned goods and the matches in the wooden cracker box. This will weigh fifty-eight

Leaving Civilization

pounds. The potatoes, which will weigh one hundred and thirty pounds, put into two meal bags. The cooking kit will go in a meal bag and will not weigh over twenty pounds. There will also be the two tents, which when strapped together with the blankets will weigh about sixty pounds. The total luggage then is fifteen sacks weighing six hundred and fifty-five pounds, a box of canned goods weighing fifty-eight pounds, a case of eggs weighing twenty-five pounds, a jug of molasses, three pails of lard, three

lanterns, the guides' luggage, the guns, an axe, and two canoes. On short carries this means three trips and on long carries six trips. This, however, is taking everything which a man can ask for, and if one only takes half this amount he would still live comfortably.

CHAPTER IV

CAMPS AND CAMP FIRES

So much for the preliminary canter. Let's now take it for granted that we have been paddling all day long away from civilization, and are looking for a place for our first night in the woods. Strange as it may seem, only a few sportsmen are able to select a good camping ground, some doing it by instinct, but the others, in nine cases out of ten, selecting a place which has some "out" about it.

A Temporary Camp

If you are canoeing there is always a temptation to make camp on the edge of the water. This you should never do, but should wait until you come to a hard-wood knoll, as low ground is damp, and you will generally find mosquitoes there. If there is no high land close to the shore make your camp on some point projecting out into the water, where the currents of air keep most of the mosquitoes away. If you are

not canoeing, but tramping, make your camp on some hard-wood ridge near running water, or better still, near a boiling spring, one of nature's best gifts to man, and if you do not want to finish the day's work doing some hard lugging, see that your camp is near a supply of maple, beech or birch for firewood. This is more important than being near a good supply of water, as it is easier to bring the necessary water than to tote the firewood.

Make your camp on ground sloping to the south, if you can find the right sort of a place, so that when sleeping your feet will be a trifle lower than your head. This also gives the sun a chance to get into your tent.

Never build a camp in dense woods, on account of falling timber, or where water will settle if it rains, or near dead wood or underbrush, which is always a breeding place for mosquitoes and insects. Keep in the open where the breeze will drive away the flies and mosquitoes, but near a supply of firewood. If you find a shaded place, or one partly so, so much the better, especially if it is along the side of a brook or a pond, as few sportsmen feel at home in camp unless there is water to look at from the tent.

Never pass a good camping ground in the afternoon, if you are not sure of finding another good one before dark. It is better to stop at three o'clock, where there is wood and water, than to run the risk of not finding the right sort of a place later.

If your camp is only for the night, and you do not intend to pitch a tent or make a brush camp, spread your blanket under a large tree where the

A Lean-to Camp

branches will keep off the dew and protect you from the wind and rain. See, however, that you have not selected a place near a standing dead tree, as the branches may come tumbling down if a wind springs up in the night. See also that there are no tree roots where you are to lie, for a root that looks no larger than a mud worm in the daytime grows as large as your arm by midnight if it is under your back.

Building a Fire

After locating your camp the first thing to do is to get a fire started—a thing which any one can do when there is plenty of dry wood, but a difficult thing to do when there has been a long, pelting rain, and everything is soaked with water.

In rainy weather never try to start a fire by chopping down a pine or a spruce, as the wood is too green to burn, or a birch, beech or maple, as the wood is too hard. If you cannot find dry wood hunt around for a cedar, as it splits easily and ignites quickly. After you have chopped it into firewood, take some of the smaller pieces and stack them in a pyramid to make a draught. Then from the dry heart of the tree whittle up enough shavings to start your fire with. If you cannot find a cedar you can generally get some dry birch bark on the lee side of the tree, and by using dead twigs you can get enough of a blaze to dry the firewood. If you cannot find either a cedar or a birch the only thing left to do is to chop into a fallen tree for dry wood and then whittle up shavings.

If it is still raining, build your fire on the lee side of some tree or boulder where the rain will not reach it.

Never use the limbs of trees or brushwood for firewood for the night. These give momentary comfort, but for the night you should have hard wood, which will take care of you for hours and let you sleep in peace.

Never cut firewood for the night on low land bordering the water, as the moisture in the wood will give you untold annoyance by continually shooting sparks on to your blanket.

Never underestimate the amount of wood required for the night, as it is better to have too much than to turn out before daybreak and fumble about in the dark for more.

Never consider your day's work over until you have a good supply of birch bark. If the fire goes out and you wake up thoroughly chilled, you want to be able to make a fire at once without spending any time trying to ignite half-burned sticks.

In the winter time never make a camp fire under a tree which is covered with snow, as the heat will melt the snow and the water is apt to put the fire out.

In making a night fire first cut two green stakes, and drive them slantingly into the ground opposite the entrance to the tent. At right angles to the stakes put on the ground two large, green logs for fire dogs, and on these pile small stuff and dry wood. Then cut some five-foot logs, from black or yellow birch or sugar maple, and pile them against the

stakes, and then drive in two stakes to hold them in position. As the bottom log against the stakes burns away the one above it will drop into its place and you will have a fire which will burn evenly all night, and radiate the heat into your tent instead of into the woods.

A Fire Built for the Night

If it is a cold night, heat some stones in the camp fire and after putting them in the kettle, turn the kettle over in a corner of the tent. It will surprise you how long this improvised stove will keep the tent warm. By having other stones in the fire to use from time to time you can keep warm on the coldest nights. Another way is to dig a hole inside the tent, about half the diameter of the camp kettle, and after filling it with hard-wood coals from which all unburnt and smoking pieces have been taken, put the kettle over the hole and plaster up the sides with mud. A fire made in this way will need no replenishing during the night.

The Brush Camp, Lean-to and Tent

The most quickly constructed shelter is made by leaning three seven-foot poles against a fallen tree, and then spreading your rubber blankets over the poles, but be sure the tree is flat on the ground or there will be a draught under it.

The Quickest Camp to Set Up

Another quickly constructed camp can be made by cutting down a small hemlock, about four feet above the ground, and, after trimming away five or six feet of the boughs, putting the end of the tree on the stump and banking up with the boughs cut off.

The most popular brush camp, however, with sportsmen as well as guides, is the lean-to, it being the only practical brush camp to have when there are more than three persons in the party. First drive two crotched sticks into the ground about eight feet apart for posts, and on these put a stout sapling. Against this lean some poles, about a foot apart, making them secure at the bottom by sticking them into the ground or by rolling a log against them. On this framework, and up and down the sides, lay hemlock or spruce boughs, which should be lapped so that they will shed the rain.

The best bough beds are made from the tops of balsam fir boughs, as they have thick, flat needles.

Next to these come the other firs, hemlock, juniper, cedar, and spruce in the order named, and then cherry, willow, alder, and the shrubs. If properly made one of these beds is as easy to sleep on as a hair mattress on wire springs. The bough bed should be at least a foot thick and be shingled from the back toward the opening, so that the butts will always be underneath. Before you begin laying them put a log at

Known in the Woods as a Kennel

the back of the bed so that your head will be higher than your feet when the bed is boughed down, and another log at the front. After you have made the bed peg down a pole just back of the front log to hold the end boughs down, and then spread your rubber blanket out with the rubber side down.

Although a brush camp is good enough for a night or two, you probably know, if you have lived in the woods, the discomforts of a leaky roof, and that it does not add to your comfort to feel the rain playing a tattoo on you during the night. If you

have a tent, and half an hour of daylight left, don't take any chances of its raining. It is astonishing how quickly a tent can be pitched and the camp put to rights if each person knows what to do. While one is chopping up a dry spruce log for a quick fire, another fells a maple or a birch for wood for the night, another gets some balsam boughs for the bed, and the other unrolls the tents and spreads out the cooking kit. Then, while two are pitching the tent, the other two do the cooking, and soon, as if by magic, your camp has all those little touches which make one feel contented with his surroundings.

In setting up a tent, first cut four poles seventeen feet long and one pole twenty feet long. Then spread the tent out where you are to pitch it, and run through the top of it the twenty-foot pole and a piece of rope fifty feet long. Take two of the seventeen-foot poles and tie them together with marline twine two feet from the ends to hold the front of the twenty-foot pole up, and tie the other two poles in the same way for the back end. Then lift up the twenty-foot pole and the tent by the poles which are tied together, tying the fifty-foot rope to short stakes driven into the ground ten feet from the front and the back of the tent, then spread the seventeen-foot poles out at the bottom until the tent just touches the ground ready to be pegged down. By pitching a tent in this way there is no tent pole at the entrance to stumble against, and when your tent sags, as it always will during a rain, you have only to pull in the poles at the bottom to make everything taut

Housekeeping

again, which, if you have tent poles, can only be done by tightening all the guy ropes. Nails driven into these poles make convenient places to hang game on.

Now that the tent is up, the first thing to do is to level off the hummocks inside, and get your personal luggage into shape. First, drive a crotched stick into each corner of the tent to put poles on along the two side walls, so that you will have a place to hang the odds and ends on. Under these poles drive some forked sticks to lay your rifle and shot-gun in. At the two back corners of the tent lean two poles against the ridge pole to hang your clothes on, first driving in some nails a foot apart. All you now need are some shelves. These you can make by driving into the ground, at the back of the tent, four long stakes, two on a side and about a foot apart, to which cross pieces are lashed with the marline twine, and upon these putting small saplings for shelves. Spread the floor cloth out if you have one, and if not cover the ground with balsam or cedar browse; hang a lantern by a string to the ridge-pole, build a dining table under the awning, with seats on both sides, in the same way that you have built the shelves, and after you have covered the table with the oil-cloth, you are ready to send out cards for any kind of a function.

The Advantage of a Permanent Camp

Only when the promotion comes from all-day picnics to camping trips do you get a real taste of woods life, and if you have a permanent camp you

are soon in close touch with all the brooks, ponds, and hills in the neighborhood. Each will have an individuality and a personality, and before you know it you will have given names to them all. After you return to humdrum city life nothing will come up oftener in your thoughts than this daily coming back to the same camp. You will often see the picture—the tents, the canoes, the path which you cut to the water, the dining table, the coffee-pot and teapot bottom upward on sticks driven into the ground, the tin dishes and the tin pails on a log, the axe stuck into a stump, and the smouldering embers. You will also remember the fascination of hearing the report of a gun in the wilderness, and the query which always came—what game will be brought into camp? You will recall how you all looked as you sat around the camp fire evenings, puffing at your pipes and spinning yarns until it was time to turn in; how, on those nights when you had been tempted to drink too many cups of coffee, you watched the stars as they sprinkled themselves over the heavens, or sifted the night sounds that came from the forests, or listened to the toads, the owls, and the whippoorwills; and how you sometimes snapped a twig to frighten away some animal which was prowling too near the tent—a trick which your guide had taught you.

By having a permanent camp there is also the enjoyment of never being in a rush—of having plenty of leisure to wander aimlessly about and to come back to camp when you choose. As you noiselessly pick your way through uninterrupted stretches of

forests the deep silence draws its circle of mystery closer around you. On every side there is a cathedral solemnity, but with this awe-inspiring stillness there is separate and distinct from it a busy animal life around you—a life with which you are now a part. You stop to listen to the twittering of small birds as they gossip among themselves about the strange somebody who sits there so silently—the fearless chickadee repeating his name merrily, the noisy blue-jay shouting *thief, thief, thief* in the distance, and the nuthatch piping his contentment in no uncertain tones. Out on the lake comes the maniac cry of a loon, and back in the woods the lonesome hoot of an owl. You watch a red squirrel frisking in a tree near by, his tones varying as different feelings are uppermost. It is now an angry bark, now a cry of fear, now a chattering monologue about the intruder in his domain, now a long, self-satisfied call, apparently a challenge to some other squirrel. Then from afar off comes an answer to the challenge, and soon there is a preliminary skirmish, each squirrel talking in defiant tones in trees just far enough apart for both squirrels to be choking with courage.

You take time to examine some tiny footprints on the banks of some little pool half hidden under overhanging branches. You decide what kind of a creature made the tracks, and because animals have all the wants and feelings of man, and, at least, traces of all man's characteristics, which differ from them only in a degree, you wonder what the history of this animal is—whether in its little world, at best but a few

miles in extent, it has not had as many cares and worries, as many pleasures and sorrows as we in the larger world, and whether, in the arrangement of animate existence, it does not fill as important a part in nature's crevices as we ourselves. You wonder what hair-breadth escapes it has had—whether as it grew older it grew wiser, whether in the school of experience it learned to trust less to its legs and more to its wits, whether it realized that it is one of the laws of the woods that sooner or later it will have a tragic end; that it will never reach the downhill third of life which we call old age, but because of some great weakness which it has, some other animal will be able to live.

As you sit there pondering you listen to the whisperings of dead leaves on the branches, the low-toned wooing of the tree tops, or the groans and grumblings of some half-dead tree as if the swaying hurt it. You listen to the wind now lulling the trees to sleep with its quiet murmurings, now dallying about, now rushing off until its voice dies away in the distance, and then suddenly it comes sweeping back again like a tempest, and the trees wail and sob as their branches grate against each other, and the leaves rustle as if showered with a heavy rain. Among the nodding branches you see splashes of sunlight on screens of yielding leaves, or the sun, slanting down in a single ray into a thick growth of gloomy trees, makes so great a contrast with the surroundings that it brings up dreamy pictures of your childhood fairyland, while in another place the sun is just

twinkling through the leaves and looking like a diamond caught among the branches.

Often not a sound comes from the inner forests, and when a twig drops, broken perhaps by its own weight, or a leaf stirs, your mind is concentrated at once on the sound, for in the woods every sound has its meaning. Curiously enough, no two animals break even a twig alike, and to those who have lived in the woods the snapping of a twig is the index of all that moves, the cracking of a twig heavy and heedless giving warning that a bear is approaching, the hoof of a moose choking the sound, and a twig speaking under a deer's foot making a sound sharp, dainty and alert, as if some other person were stealing through the woods. Even a rustling in the undergrowth has its meaning to those who love the woods, and they know at once whether it is a little bird flitting here and there, a partridge scurrying away, a hedgehog moving about or a squirrel circling around to get a better view.

In this primeval world there are other little details which you think about—details so insignificant that nowhere else would they attract even a passing thought, but which absorb you now because nothing is marred by man's embellishments or tarnished by the daily duties of life. It is now faint odors of decaying leaves, now currents of tepid air, now little breezes wandering hesitatingly here and there, now the softness of moss, now the coolness of shade, now a fluffy cloud bank sailing along the heavens, now the dead and decaying trunk of a tree partially

covered with moss and leaves, as though nature were trying to give it a decent burial. Again, it is the stray fragment of some bird song which adds to the wildness and feeling of isolation, now a woodpecker hammering away at a tree or a borer drilling its way through a decaying trunk, or perhaps it is the croaking of frogs. As you move through the wilderness you come upon a tangled mass of dead wood in some gloomy stretch of forest, and think of

Rabbit Tracks in Snow. Drawn by the Author's Young Chum.

it as an ideal hiding place for wild animals to spring out upon you, because of hobgoblin stories you loved to listen to when a child. Now you follow some slow moving stream whose grassy bank is embroidered with wild flowers. Now you stop to listen to the water lapping along a stretch of golden sand, or the magic voice of a brook fretting away as it tumbles over half-sunken boulders, which makes it the most human and the most companionable of all inanimate things, for it has a life and a character of its own.

And in the winter time when the snow is on the ground you love to take the census of the woods from the tracks which are everywhere.

To the man absorbed with money-making, these musings of solitude lead to thoughts which are strange in his mind. The roar and confusion of the world are forgotten. He is beyond the reach of the post-office, the telephone, and telegrams. Here there are no steam whistles and factory bells, no puffing of locomotives, no bustle of city life, no clubs, no social functions. The nearest road and the nearest house are miles away. Because he no longer breathes the air of other men, but the tonic of the forests, this brings back again the buoyant spirits of his boyhood. His cares and worries have disappeared, and he feels as if school were out never to keep again. Ambition is now without standing ground, for here there is no fight for any top round, and no frittering away of life by civilized details. It is this which puts him off his guard, and because he looks his feelings squarely in the face, his inner self better shows itself than when he was on parade. With the passing hours he ponders over things not taught in school or learned by contact with other men. He takes the weather as it comes, wet or dry, and fortune as it falls. Here he finds that printed precepts are poor substitutes for nature's wild school of teaching. Here he learns that it is the touch of danger which brings out the joys of life, and that it is better to desire the things which one has than to have the things which one desires. Here it is just as respectable to be idling away

the time along the side of a brook, or with your pipe in your mouth to be lying against the trunk of a tree, dreaming of the chances of the future by the changes of the past, as to be pegging along for a larger bank account, which, no matter how honestly done, carries a taint with it, for it has somewhere in it the elements of horse trading, because what one has gained has been at the expense of another. Here, because the woods are so full of mystery, and so full of peace, wild horses are ridden and the plain, practical, every-day virtues and the best and deepest feelings come surging up. As you think over the struggles and the turmoils of your life you perhaps recall some trivial circumstance, which, drifting against the cog wheels of your life, turned it into other channels—how new hopes, new ambitions, new plans sprang into being, and that the unnoticed incident, changing but for a moment the daily environment, crushed forever all old ambitions and long-cherished plans, and then there come up queries of the whys and the where-fores of it all and the strange paradoxes of human existence.

If Caught in the Woods Over Night

If you get so far from camp that you have to spend the night in the woods, do not pick out a camping place on the bank of a stream or pond, but on a ridge or knoll. Hunt around for a large boulder, with an up and down face, and against it build a friendship fire, so that the heat radiating from the stone will keep you warm. Next, make a brush

lean-to facing the fire, and after that collect enough firewood to keep the fire going through the night. By doing this you will keep your mind occupied, and perhaps keep from getting rattled.

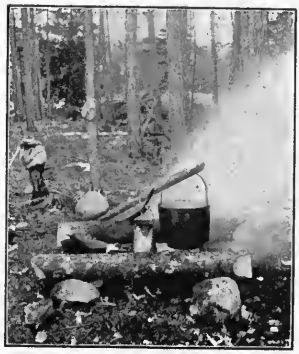
If you have forgotten to bring your waterproof match box get some dry, decomposed wood, or punk as it is called, out of a decayed stump or rotten cedar log, and with a piece of quartz or a hard, jagged rock make a spark by striking it against your knife blade, with slanting blows toward the punk. If you have forgotten your knife use two rocks, and if you cannot find any punk make a fine lint with some of the cotton lining of your coat. Don't waste your time testing those Indian fables of rubbing two sticks together until one begins to burn, or those yarns about scraping fine curly shavings from a pine stick and lighting them with a spark.

After the Day's Work is Over

CHAPTER V

CAMP COOKING

REMEMBER that there is no place which brings out the sharp edges of a man like the woods. You and your companions may be members of the same church or partners in business, or you may have seen each other daily for years, but until the veneer of civilization has been stripped off your real disposition will not show itself. Nothing will take this veneer off like camp cooking, and at such times all your philosophy and all your early religious training will come into play. Sometimes you will see red, and before the trip is over you will make up your mind that some men could never learn to cook, and that others could not boil water without burning it. Above all things don't show such a lazy streak in your make-up that your companions will tell your friends when you get home that you said, "John, you get the wood



Getting Ready

and build the fire; Fred, you get the breakfast; Tom, you wash the dishes, and I'll put the fire out."

Always have a separate fire for the cooking, but don't be an amateur and because wood is plenty have a fire which will roast an ox. Leave some of the wood for a return trip. Before you begin cooking let the wood burn until there are plenty of live coals. Then, poke the pieces which are still giving out a flame to one side for the boiling and stewing, and use the hot ashes and live coals for broiling, baking, roasting and frying. Remember that old camp cooks take all unburnt wood out of the fire before they begin to cook, and that the novice is sure to put more wood on. Remember, too, that the secret of baking, roasting and frying is a bed of hot coals, and the secret of broiling is a hot bed of hard-wood coals.

If you do your cooking on a cooking range put two of the steel bars on corner stones, and lay the other two across them, but be sure to get flat stones or there will be an accident. Many sportsmen, who believe these steel bars weigh too much to tote about, put two green logs on the ground, and lay two other logs across them in notches cut in the under ones. The simplest way, however, is to level off the tops of two green logs, and after laying them eight inches apart at one end, and four at the other, build a fire between them, as a very little fire will do all necessary cooking.

Another way is to hang the coffee-pot or tea-pail from a crane made by driving a crotched stick into the ground, and in the crotch to rest a long, green

pole with one end held down by a stone or a log, the other end being over the fire. The common way, however, is to drive two crotched sticks into the ground, one on each side of the fire, and put a cross piece from one to the other, from this cross piece hanging forked sticks, with nails driven into them at different heights to hold the boiling pails on, the

The Simplest Way

frying being done on two logs rolled into the fire, and the roasting and baking in the baker in front of it.

As soon as the fire is started you are ready to begin housekeeping, but whether it is to be that of a three-room flat or a brown stone front will depend upon the provisions you have brought along. If you go into the woods properly equipped you can have a choice for breakfast of oatmeal, boiled rice, Indian meal porridge, eggs in various forms, baked beans and brown bread, codfish balls, codfish and baked potatoes, venison and moose steaks, fresh fish, smoked halibut, corn bread, corn cakes, hot biscuits, muffins,

buckwheat cakes, boiled, fried, or stewed potatoes, rice cakes, doughnuts, and coffee; for dinner, rice soup, pea soup, potato soup, venison soup, fish chowder, partridge stew, fish in various forms, roast venison, pot pie, broiled partridge, geese, ducks, macaroni, rice, succotash, boiled beans, onions, potatoes in dif-

The Common Way

ferent forms, rice pudding, blueberry pudding, bread pudding, and apricot, prune, or apple pie; and for supper cold venison, partridge, goose or duck, sardines, toast, hot biscuits, potatoes, preserved apricots and pears, stewed prunes, cold rice pudding, camp cookies, gingerbread, and tea. No epicure could ask for a better variety, and with the woods' hunger which you will have, things will taste as they never tasted before.

Now is the time when your bacon will come into play, as you will use it instead of butter with nearly

everything which goes into the frying-pan. You will find that it will give a better flavor to whatever is being fried, and in the woods you will always be hungry enough to want a slice of it besides. Be sure, however, to first parboil it with a little water, which will prevent it getting burned.

Coffee and Tea.—In making coffee allow one tablespoonful of coffee to each cup of water. First, put the coffee into the coffee-pot, and stir it up with an egg and the shell. Then pour in boiling water, and after it has boiled a few minutes let it simmer by the fire for twenty minutes. If you have no eggs, settle it with a piece of dried fish skin or by pouring in a little cold water. In making tea use one teaspoonful of tea for two persons. Put the tea in the teapot and then pour in boiling water. Let it steep for five minutes, and settle it with a little cold water. If you are off for a day's tramp and have no cooking utensils, tea can be made in a birch basket by putting some water into the basket before it is put over the fire, and, when the water begins to simmer, putting in the tea. The water will keep the basket from burning, but be careful that no flame gets started in the fire, and don't try to make the water boil.

Bread.—The best bread is made by stirring up your prepared flour with diluted condensed milk instead of water. Mix the dough well together, and after greasing the baking-pan put it in the oven without kneading it. If you have no baker take a tin cover and the frying-pan or two kettles or two frying-pans, putting the dough into one and the other over it.

Put this on a thick bed of coals with live coals on top, and you have an excellent oven. Let the bread bake for fifteen or twenty minutes, and when you run a hard-wood sliver into it, if no dough sticks to it the bread is ready. If you have brought nothing which you can cook bread in, wind the dough around a hard-wood stick, drive the stick into the ground close to the fire, and turn it as the bread bakes.

Biscuits.—Put some of the prepared flour into the baking-pan, pour in enough diluted condensed milk to make a stiff dough and add a teaspoonful of baking powder and a teaspoonful of salt. Mix it all well together, but do not stir it much, as this will make the biscuits heavy. Roll the dough out with a bottle on a good-sized chip, first sprinkling some flour on the chip to prevent the dough sticking. Cut it the right size with the top of your baking powder can, and put it in the baker. If you do not have the prepared flour add two teaspoonfuls of baking powder to the flour. To freshen old biscuits or bread wrap them in a damp cloth, and then put them in the baker for a few minutes.

Brown Bread.—Mix together two cups and a half of flour, two cups and a half of Indian meal, one cup of molasses, three cups of diluted condensed milk, and a little salt. If you do not have the prepared flour add two teaspoonfuls of baking powder. Put this into an empty lard pail with the cover on, and then put this pail into a larger pail on some stones and partly fill it with water. Put the cover on and let it steam until the flour and meal are well cooked.

Corn Bread.—Take one quart of Indian meal, one teaspoonful of salt, one teaspoonful of baking powder, two tablespoonfuls of sugar, a beaten egg, and mix with diluted condensed milk to a thin batter. After stirring it well put it in a greased pan and let it slowly bake in the baker for half an hour. Remember that the secret of light corn bread is in getting it into the baker as soon as it is mixed.

Corn Cake.—Use one-half flour and one-half Indian meal. To a pint of each add one teaspoonful of baking powder, one teaspoonful of salt, two eggs well beaten and two tablespoonfuls of sugar. Mix this with diluted condensed milk into a dough only stiff enough to prevent it running. Then let it bake slowly for thirty minutes. If you do not have the prepared flour use two teaspoonfuls of the baking powder.

Blueberry Cake.—Take a cup of sugar and a piece of butter the size of an egg, and beat them well together. Add one cup of diluted condensed milk, two cups of flour, a little salt and two teaspoonfuls of baking powder to give it more of a "hist," and then put in whatever blueberries the bears have left.

Buckwheat Cakes.—If you have ever camped out in the fall you know that every morning your guide will have for breakfast buckwheat cakes and maple syrup, and you will look for them as much as your baby looks for his sterilized milk. If you have never had them served on a freshly cut hard-wood chip at daybreak on a frosty morning, you have never enjoyed real wood's life. The pile which is put before

you, you may think is enough for all; but even if you are dyspeptic you will be able to do the trick alone, and long afterward when you are grinding away at your desk you will have to fight your lips to prevent them smacking together. See that your guide mixes the buckwheat flour with enough diluted condensed milk to make the flour no thicker than thick cream, as most guides get the flour too thick, which makes the cakes heavy.

Oatmeal.—As most of us had oatmeal before we had trousers we don't look upon it as a luxury, but in the woods every kernel given you as your portion will be disposed of. To prepare it mix the oatmeal flour with water, and boil until it becomes soft. Add salt while it is boiling, and occasionally stir it to prevent its burning. The safe way is to set the pail containing the oatmeal and water in another larger pail containing hot water. It then can't burn.

Fried Indian-meal Mush.—Boil the Indian meal in the afternoon in water with a little salt added. Have some of it with your supper, and what is left set aside to harden over night. In the morning cut this into thick slices, and fry with bacon until it is brown on both sides. With maple syrup and plenty of butter you will touch your cap to the cook and ask for more.

Doughnuts.—Your doctor has probably told you that doughnuts are indigestible, but in the woods your stomach will stand the test. In making them beat together two eggs and a cup of sugar. Then add half a teaspoonful of nutmeg, half a teaspoonful of salt

and one teaspoonful of baking powder, and mix in a cup of diluted condensed milk. Stir this well together and add enough flour to make it into a dough just thick enough to roll out and not stick. Cut it into rings, and after making a hole in the centre of each ring with your finger, and giving it a whirl, drop it into a pail of boiling lard. If you do not have the prepared flour use two teaspoonfuls of baking powder.

Pie Crust.—Mix the flour with half the same amount of melted lard and add enough cold water to make a dough thick enough to roll out and not stick, adding enough salt to kill the taste of the lard.

Camp Cookies.—To a quart of flour add a teaspoonful of baking powder and a pinch of salt. Mix these well together and then add one cup of seedless raisins, one cup of sugar made into a syrup with water, and two teaspoonfuls of melted lard. Stir the whole up with diluted condensed milk to a thick batter. Cut it into cakes, and bake in a quick oven, taking care that they do not burn. If you do not have the prepared flour use two teaspoonfuls of baking powder.

Molasses Cookies.—Take one cup of molasses, two-thirds of a cup of lard, one teaspoonful of baking powder dissolved in two-thirds of a cup of warm water, one teaspoonful of ginger, two cups of flour, and beat them well together. Then add a cup of sugar and beat in enough flour to thicken it into a thick batter. Roll it out thin, cut it into cakes and bake in a quick oven. If you do not have the prepared flour use two teaspoonfuls of baking powder.

Gingerbread.—Take one cup of molasses, half a

cup of lard, one egg, one teaspoonful of ginger, a little salt and half a teaspoonful of baking powder dissolved in hot water. Mix these well together with a cup of lukewarm water, and then add flour enough to make it into a thin dough. Bake in a quick oven. If you do not have the prepared flour use two teaspoonfuls of baking powder.

Rice.—For boiled rice put a cupful of rice in the camp kettle with two quarts of boiling water and two teaspoonfuls of salt. Let the water boil slowly until the rice is soft and the water has boiled away, and be careful not to let it burn. If properly cooked every grain of rice will be whole. When making rice cakes add a little flour to the cold boiled rice to keep the cakes from crumbling. In making rice pudding boil the rice in water until the rice becomes soft, then add a cup of seedless raisins, a cup of sugar, and a cup of diluted condensed milk, and let it boil until the raisins are cooked. Then set it near the fire until the water has evaporated. Make enough of this pudding for the larder, as it is always a good cold dessert and when warmed up is almost as good as when first cooked.

Potatoes.—You will of course say you have eaten baked potatoes, but unless they were baked in hot ashes, and you sat on a log, with a pinch of salt in one hand and a potato in the blackened fingers of the other, you have never had the real thing. Never put potatoes in cold water and then let the water boil. If they are new potatoes put them in boiling water after taking off the skins and adding a small handful

of salt. If they are old potatoes soak them for half an hour with the skins on, wash them, cut a piece off each end, so that the skins will come off easily, and then put them in boiling water. For fried potatoes cut some boiled potatoes into thin slices, and put them into the frying-pan with strips of bacon. For Saratoga chips use raw potatoes instead of boiled ones, and fry them in boiling hot lard. For stewed potatoes cut some boiled potatoes into slices, and after putting them into the frying-pan with enough water to cover them, thicken them with a little flour, pouring in diluted condensed milk while they are stewing, and adding pepper and salt as they thicken. As you are in the woods add an onion. For potato soup mash up some hot boiled potatoes until they have no lumps, then put them in water to which considerable condensed milk has been added and a little flour, then put in a few pieces of hardtack and season with onion, pepper, and salt.

Beans.—For boiled beans, or pot beans, so called, first parboil the beans in hot water, and then wash them in cold water. Then put them in fresh water and boil them after adding salt pork cut into small pieces. When the water begins to boil season with pepper and salt and a spoonful of mustard. Let them boil until they become soft, or about three hours. If you have thought of it in time let them soak over night before parboiling them, putting them into a good-sized pail, as a pint of beans will swell into a quart. After this wash them in cold water. Put in three tablespoonfuls of molasses, and after pressing a

good-sized piece of scored salt pork into the centre, pour in hot water until the beans are covered, and then put them in the oven. If you put in an onion or some mustard it will give them a better flavor. Keep them in the oven from one to three hours, for the longer they bake the better they will be.

Beans Baked in the Ground.—If you have ever eaten baked beans cooked in a logging camp, you will appreciate why lumbermen like to have beans six days in the week, and then want an extra allowance on Sunday. If you have taken with you into camp some dry beans, some salt pork, and molasses, you can have beans baked in a bean hole, which will be better than any you have ever eaten at home. First dig a hole, and line it with stones, having the hole twice as wide and twice as deep, after the stones have been put in, as your bean-pot. In preparing the beans soak them over night, and then wash them in fresh cold water in the morning. After this parboil them in hot water until the skins crack when you blow on them. A kettle or anything which is not soldered will do for a bean-pot if it has a cover. Put into the bean-pot a teaspoonful of salt, three-quarters of a pound of scored salt pork, a sliced onion, then half the beans, then another sliced onion and another piece of pork, then the rest of the beans with another half-pound of scored pork on top. Over the whole pour two tablespoonfuls of molasses, and fill the bean-pot with enough hot water to cover the beans. On top put a piece of birch bark, just the size of the bean-pot, as this swells when the water

becomes steam and prevents any of the steam escaping. Over the birch bark put the cover, and see that it is tight enough to prevent dirt or cinders getting in. An hour before the beans are ready for baking make a fire in the bean hole with hard wood. When the hole is full of hot coals take out all unburnt wood and half the coals, and after you have put the pot of beans in, put the coals back around the sides and on top of the bean-pot and then cover it all with the earth dug out, being careful that there are no air holes to let any steam or heat out, or your beans may dry up and be spoiled. Keep the beans in the hole from noon until the next morning, and when you take them out they will have a flavor which you never suspected they could have, for in no other way can you get such an even and steady heat, or a place so air-tight that none of the juices evaporate.

Eggs.—For scrambled eggs, first stir the eggs up, and after putting some butter in the frying-pan, stir the eggs in it after adding a little condensed cream. For poached eggs, first put in the frying-pan sufficient diluted condensed milk which has been thinned with enough water to float the eggs, and when the water begins to boil drop the eggs in, and let them simmer three or four minutes. Serve the eggs on slices of buttered toast, pouring on enough of the milk to moisten the toast.

Fish.—In broiling fish put a thin strip of pork or bacon on top of the fish, so that the fat will melt over the fish while it broils. If the fish is a large one cut it lengthwise, and then slash it after dressing and

taking off the head. Cover it with Indian meal with some salt added, and broil it over hot coals, from time to time putting on a little butter. If the fish is a small one, and you have no broiler, needle the end of a hard-wood stick through its mouth and body and baste it with bacon as you hold it over the fire. In stewing fish cut it into fairly small pieces, and put the pieces into the frying-pan with diluted condensed milk, potatoes, and bits of onion, seasoning the whole with salt and pepper. In frying fish cover the fish with Indian meal, and fry in salt pork. Remember, however, that only when they are put into a very hot frying-pan will they retain the juices and flavor. Baked fish. If you are without a baker you will probably be enough of a sybarite to want baked fish. You can get ahead of the baker, however, by making a stiff mud with clay and water, and after rolling it out with a bottle until it is half an inch thick, covering the fish with it, and then putting it in a bed of hot ashes in a hole dug close to the fire. If it is a large fish let it bake two hours. When taken out the clay will be baked hard, and when broken off the skin and scales of the fish will come off with it. If it is a large fish you can bake it without using any clay. First, stuff the fish with bread crumbs or crackers chopped up with meat; then rake away the embers of the fire, and after putting the fish in, cover it with the hot ashes. In an hour take it out, peel off the skin, and you will have a dish too good for any but honest men. When boiling a fish put it into a pail of boiling water after dressing it, and let it re-

main until it is thoroughly cooked. For a sauce put some butter in the frying-pan, add flour and water made into a thin batter, then put in some hard-boiled eggs cut into small pieces, and, after stirring it together, pour the sauce over the fish.

Fish Chowder.—First, dress the fish and then boil it in a kettle long enough to get the bones off easily, in order to have a boneless chowder. Slice up some raw potatoes and onions and put them in another kettle. Cut some pork into small pieces and fry in the frying-pan. Never use bacon. Pour the water with which you boiled the fish into the kettle which has the potatoes and onions in, adding more water if necessary. When the potatoes are nearly boiled put in the fish and the pork. Put a tight cover on the kettle, and after letting it boil for a few minutes add half a can of evaporated cream, and season with pepper and salt. Never use condensed milk, as it is too sweet.

Fish Cakes.—Take boiled or baked fish, and after removing the bones, make it into a mince and mix it with equal parts of bread crumbs and cold boiled potatoes. Season it with onion, and fry with bacon until both sides are browned.

Pot Pie.—Take a quart of flour and a cup of lard and make a dough, adding a teaspoonful of salt and a little pepper. Roll this out and line the kettle with it. Then put a cup in the kettle upside down, and around it a layer of cooked meat or game. Over this put a layer of onions, and a layer of sliced raw potatoes, and on top put a thin layer of the dough,

pinching the edges against the dough on the sides of the kettle. Cut a hole in the centre, pour in a pint of boiling water, and let it cook for half an hour over a slow fire. If it doesn't give you an appetite, even if you are a sick man, it is because you are beyond the reach of medicine.

Venison Steaks.—A steak should never be fried, but broiled. This can be done in the frying-pan if the steak is cut thick, and the frying-pan is so hot that it sears the steak as soon as it is put in. Never let your guide put any salt on the steak until it is cooked, as the salt draws out the juices, and never let him put any fat in the frying-pan, as this boils the steak instead of broiling it. Another way to broil steak is to string alternate layers of venison and bacon on a hard-wood stick, and after pushing them close together, hold the stick over a hot fire. A steak eaten in the woods cooked in this way has a flavor you will never get anywhere else.

Deer or Moose Stew.—This is a dish which all sportsmen generally eat more of than the official capacity of the human stomach registers. First, hang the camp kettle over the fire, half filled with water, and into it put deer or moose meat, cut into small pieces, with all the fat taken off. Let the meat boil until it is nearly ready to fall to pieces, and then add potatoes, onions, boiled rice, and whatever vegetables you have. Let it simmer until the potatoes are soft, and, from time to time, skim off any fat which may rise to the top, adding salt and pepper for seasoning. If the stew is not thick enough add

more boiled rice or a little flour, which you must first stir up in a cup of cold water.

Partridges.—Always open a partridge or other small bird on the back, otherwise you will spoil the breast, and after you have cleaned it always parboil it. In broiling a partridge put a thin strip of pork or bacon on top of the bird, and let the fat simmer over it as it broils. If you have no broiler take a crotched stick and tie the bird to it with hemlock roots, holding the stick over the fire with the bird on the under side. If the bird is not held too near the fire the hemlock roots will not burn. In baking a partridge, if you are without a baker, take out the entrails, cut off the head, and after seasoning it, cover it with clay mud about half an inch thick. Then put it in a hole close by the fire and cover it with hot ashes, letting it bake two hours. When you take it out and break off the clay the feathers will come off with the clay, and you will have some juicy meat which once tasted will not be forgotten, as the clay prevents the juices escaping. If you can get no clay take out the intestines through a small hole in the vent, wet the feathers thoroughly and then put the bird in the hot ashes. After it is baked pull off the burnt feathers and the skin, and you will find the meat has a delicate flavor. Another good way to cook a partridge is to put it in the bean-pot when you are baking beans. This gives a flavor both to the beans and the partridge.

Small Birds.—In cooking woodcock and other small birds scrape out the inside of a large baked

potato, and after dressing the bird and cutting off its head and legs, put it in the potato skin, and bake the potato again. After you have tried it you will make up your mind to live in order to eat.

Roasts.—If you have no oven for roasting either fish or birds cut a piece of green bark off a tree, and after wrapping your fish or bird in the bark put it in a hole filled with hard-wood ashes, and cover it with earth. Let it remain for two hours or more, according to the size of the roast. By leaving the skin on while it is roasting it keeps the flavor, and when it is thoroughly cooked the outside skin will come off easily. Be careful that no live coals are in the pit or the bark, or the roast will burn. Instead of using bark you can cover the roast with several layers of paper or green leaves which have been thoroughly wet.

Jerked Venison.—If you have an over supply of deer meat which you would like to distribute among your friends when you get home, as a prelude to those exciting hunting stories which you are sure to tell, take back with you some jerked venison, and the hunting stories will need less salt. To prepare the venison cut the meat into thin strips, and wrap them up in the hide after working plenty of salt into the meat. Leave these strips in the hide for two hours, and while the meat is curing cut four forked sticks and drive them into the ground so that they are four feet high and eight feet apart, in the form of a square. In the forks on two sides put two poles, and from one pole to the other lay cross pieces, about

two inches apart. On these lay the strips of venison. Underneath start a small fire of hard-wood, and keep it burning twenty-four hours, or until the venison is like dried or smoked beef. Fish can also be treated in the same way, first splitting them open on the back and taking out the backbone.

Hints About Camp Cooking

Of course you will often come back to camp empty-handed, and if you are a good provider you will always have something already cooked in the biscuit-box and some fish and game hanging up.

Remember that if you boil or broil meat too fast it toughens it, and that birds and fish should be thoroughly cooked.

Remember that you should never put game or fish in boiling water. Put them in cold water and after the water has boiled let them simmer.

Remember that deer or moose liver fried in bacon is a tid-bit which every one enjoys in the woods.

If you shoot a sheldrake parboil it and let it simmer over the fire before you cook it, but do not put any salt in the water.

Often when the outside of meat or game is too ripe the inside is just ripe enough. To find out, stick your knife into it for the verdict.

Use the water you boil your meats in for pea or bean soup.

In peeling or slicing onions do it in water, and you will not cry for home and the babies.

Always carry along some luncheon when on a long tramp. No man should go after game without being well fed. Although he may flatter himself that he is not hungry, the want of food is apt to affect his shooting, especially if he has a hill to climb or a run to make. Nothing is better than buckwheat cakes and fried bacon made into a sandwich, as they do not dry or crumble up and stick well to the ribs. Venison cut into strips half an inch thick and then soaked a day in strong brine, and after that dried in the smoke of the camp fire, also makes a good luncheon, and gives that desirable solidity of muscle and nerve which is essential to good shooting.

If you are on a day's hunt and have bagged a bird, or have caught a few fish, and are just wet, tired and hungry enough to want a square meal, get two flat stones, and build a fire over them. After they have become heated, scrape away the embers, dust off the stones, put your bird or fish on one stone, and the other stone on top, and then rake the hot embers over them. After you have had your luncheon you will be ready to try conclusions with a bear.

Remember that you can always have cold water by wrapping a wet piece of cloth around your waterpail, or around a bottle of water with the cork out, and hanging it in some shady place.

Camp tongs are always convenient things to have. These are easily made by bending double a green stick, and then holding the bent portion over the fire until it keeps its shape.

If any part of your cooking kit leaks make a paste

of flour, salt, and fine wood ashes, plaster it on where the leak is, and let it dry.

Burn up in the camp fire all table refuse, the potato skins, and the wet tea and coffee grounds. Also throw into the fire the tin cans which you have used, and leave them there until they are well burnt out. If thrown to one side they breed maggots and attract flies into the camp.

If you are camping on the bank of a stream or pond the easiest and quickest way to wash the dishes is to rub sand over them and then rinse them in the water. Don't, however, tell your wife when you get back that this is the way you did it. Such rashness would be worse than weighing trout, and don't wash the camp dishes in this way if you have plenty of time.

The best way to clean the frying-pan is to put it on the fire, and when it gets hot take it off and throw some cold water into it. Then scour it with sand, and wash it in a civilized way.

Luncheon Time

CHAPTER VI

WHAT TO DO IF LOST IN THE WOODS

NEARLY every one who has lived in the woods has at some time been lost, and when the usual run of bear stories are being told around the camp fire there is always some one with a good yarn to tell of the experiences of some friend who stumbled about in the woods with his heart in his mouth and his brains in his heels, trying to find the camp. Because of some singular aberration of mind a man will often lose his grip on the truth, if it is a bear story; but when stories are being told of being lost, not one man in a thousand tells more than half he could unless the joke is on the other fellow. Whenever my turn comes to yarn it off I always tell about a cook we once had, named Joe, a sawed-off, good-natured, jovial down-Easter with a black beard which would do credit to a pirate, who was lost while packing

Hard to Find When You're Lost

across from our permanent camp to a temporary camp on another stream. There had been a fall of snow the night before, and two of us had struck out early, hoping to pick up the track of a deer, intending to reach the new camp about noon. Joe had been left to tidy up and then to take over some provisions and the cooking kit, but unfortunately we had left a flask of whiskey in the camp. Perhaps it was the whiskey, but at any rate Joe had hardly started when he began to circle, and before long was back on his first tracks. When he saw them, thinking one of us was ahead of him, he stopped long enough to take another nip and with, "Here's hoping I'll overtake you," hurried along. He was now, of course, bound to make another circle unless he discovered that he was following his own footsteps, and in another half-hour was around to what he supposed were the tracks of both of us. He was now sure that there would be some talking done when he reached camp, as we had told him to have a fire ready. I cannot do justice to the way he described it when he came around the third time. "I knew I had been drinking too much," he said, "and several times tried to make it out that there were only two tracks instead of three, and then I was afraid I had 'em. First, I sat down on a log and counted my fingers to see if they would stand the test, and then I got down on my hands and knees and counted the tracks, for I'll be dog-goned if I didn't believe I was getting lightheaded and having dreams. I'll admit I was frightened, and took an oath never to touch liquor again."

Afterward he confessed that there was one more gurgle of the whiskey when he again started. That afternoon, becoming anxious, we went back to look him up and found him sitting on a stump, with that perplexed expression which a man has when he has lost his suspenders or has found out, too late, that he has forgotten to put his necktie on. Around five sets of tracks in front of him he had drawn wabbling circles in the snow, and in the centre of each had put a stick. He didn't see us at first, and every little while would count his sticks, and then go back to his stump and count his fingers. Finally, he looked up from under his slouch hat and saw us, then his face brightened, but the only thing he said was, "Thank God, I thought you were those other fellows."

To prevent getting lost in the woods the first thing to do after you have made camp is to see on your map where the ponds and streams are in the immediate vicinity, and the direction the streams flow, in order to get a general idea of the geography of the country; and the second thing is always to take a compass with you whenever you leave camp, even if you are an expert in wood craft. You may only need it the thousandth time, but that thousandth time "you will need it bad." Always look at it when you leave camp, so as to know in what direction you are going, and when you change your course as you go through the woods keep the direction in your mind. This you should be especially careful to do when going over ridges, as you are then apt to lose your bearings without being conscious of it.

Getting Bearings When Lost

Remember that in rainy or thick weather, or in a snow-storm, it is often impossible to tell in what direction the camp is, and that even a guide familiar with the country sometimes gets turned around.

Never leave camp without taking matches. If you are lost it is better to be without a friend than without them.

If you get in a thick blow down, and find that you are dodging about to get out of the tangle, make up your mind in which direction the camp is and go straight through the brush. It may take longer, but the chances are that you will get out quicker. If you do not do this the probability is that before you know it you will lose your bearings, and then lose your head.

If you have lost your bearings and it is a cloudy day put the point of your knife blade on your thumb nail, and turn the blade around until the full shadow of the blade is on the nail. This will tell you where the sun is, which will be sufficient for you to decide in what direction the camp is. If you are in the woods after the stars are out get the points of the compass by locating the north star.

If you are a good woodsman you can get your bearings by looking at the foliage on the trees, which is thicker on the south side, and at the branches, which are shorter and more knotted and twisted on the north side. You can also get your bearings by looking at the tops of high pines, which dip toward the north. These are signs, however, which a novice would hardly be able to recognize. If you are on

the bank of a sluggish stream look at the reed grasses, as most of them will be leaning a little down stream, having been bent that way when the stream was higher and swifter. If you find a mouse hole in a tree you may be sure that it is in the south side of the tree.

If you come upon a wood road you can easily tell whether it is a logging road or a tote road, as a tote road is crooked and goes around trees and boulders, while a logging road is straighter and broader. By following a logging road you will be sure to come to a place where two of these roads come together, which will always be pointing in the direction of water, as all logging roads lead to some stream or pond.

When tramping about, if there is any question in your mind that you may not be able to find your way back to camp, break the branch of a bush occasionally, which will tell you the way to go when you return.

If you have never been lost in the woods you do not know how completely a man gets rattled when it dawns upon him that he does not know in which direction to go. In his first excitement he goes stalking off almost on a run, and as he becomes more and more excited he becomes the more warped in his judgment. He soon becomes headstrong and, being in anything but a passive frame of mind, will pay no attention to well-known signs which would tell him where the camp was, this being especially true if he has made up his mind that the camp is in

another direction; his frame of mind now being worse than that of the Indian, who angrily said, "Indian no lost! Indian here! Wigwam lost!" More than one man in this frame of mind has come to some stream well known to him, and because he thought it was flowing in the wrong direction, believed that something had dammed it up, or as a friend once said to me, "How in the devil did this brook ever get over on this side of the tote road?" Others have insisted that the sun was wrong in the heavens. Others have been so completely dazed that they were not able to recognize their own camps when they came out of the woods, and others have been dazed enough not to know, when looking at a compass, which was the north end of the needle—the black or the white; and more than one man has come out of the woods in a white rage, convinced that his compass had been in such close proximity to iron that it pointed wrong. If a man who is lost would only keep his mind clear enough to go straight ahead in any direction, he would soon come to a lumberman's road or some stream where he could get his bearings; but, instead of doing this, he wanders about in a circle, often over a piece of woods not twenty acres in size. Many reasons have been given for this. One plausible reason is that the heart, being on the left side of the body, makes a person take a stronger step with the left foot, which keeps him bearing to the right.

If you find that you have lost your bearings don't lose your head. Sit down and think it over quietly. The first thing to do is to recall the direction you

took when you left camp, and then the turns you afterward made. Then take your compass and see if it agrees with where you think the camp lies. If you find that you are right start back, but unless the lay of the land or something else looks familiar to you climb a tree, or get on some elevation, and try to locate something which you passed earlier in the day. If you find that you are going in the wrong direction don't let your brains ooze down into your feet, and get your feet started on a run, but give it up. Build a fire, eat whatever luncheon you have, light your pipe and make up your mind that the only sensible thing to do is to wait for your guide or some one in camp to hunt you up. Don't make any more attempts to find your way back, but get some green wood, wet moss, or damp leaves and put them on the fire. This will make a smoke so that you can be located. If it is late in the afternoon you may be reasonably sure that the wind will go down with the sun, and that the smoke will rise high enough to be seen a long distance. As an extra precaution, build another fire a little distance from the first one, as this means to any one who sees the smoke that somebody is lost or that there has been an accident. Another well-recognized signal is to fire two shots in succession and a minute later another shot, but remember that it will be of no use to keep firing if there is any wind and that it is a waste of energy to shout. The firing of your gun will make you nervous, and shouting will exhaust you.

If you have no matches to start a fire make a lint

with the cotton lining of your coat, using the crystal of your watch, or the glass in your compass, or your spectacles as a sun glass, blowing at the same time on the lint.

Remember that if you take your head in your hands and keep your heart out of your mouth, being lost in the woods is a comedy and not a tragedy.

Telling About It Afterward

CHAPTER VII

SOME TROUT THAT TAUGHT ME SOMETHING ABOUT ANGLING

CONTEMPLATIVE men who love quiet places generally go a-fishing, the favorite fish, as a rule, being the square-tail trout, otherwise known as speckled trout, brook trout, and red spotted trout. Excepting the salmon this fish has more gameness, taking everything into consideration, than any other fish. It has attracted many a man from the demoralizing environments of city life and has filled many a library with thoughts worked out on the bank of some stream while the angler has watched some lazy veteran listlessly waiting for bugs to drop from overhanging alders or to float by on the water—for after all the whole of fishing is not fishing. There is something, too, about this fish with his spangles of crimson, blue or orange, his all-round beauty and vigor, whether off the hook or on it, which so impresses the one who has hooked a

Lake and Brook Trout

good-sized specimen that it is never good judgment to question the length of the fish or its weight, or to have within reach a foot rule or any scales.

All trout belong to the salmon family. The square-tail species is not, however, the trout of the gentle Izaak, but belongs to that group of salmon known as Chars, a fish distinguished from the true trout in having the vomer (one of the bones of the skull) boat-shaped and no teeth in its shaft. Another subdivision of this salmon family includes the salmon trout, the Rocky Mountain trout and the Yellowstone trout; and another the Mackinaw or the great lake trout, the longe or the lake trout of Vermont, and the togue or the lake trout of Maine and New Brunswick.

Salvelinus Fortinalis (small salmon living in springs) is the naturalist's name for square-tail trout. They rarely exceed two or three pounds in weight, although in certain localities they sometimes weigh as high as thirteen pounds, some large specimens, according to Agassiz, having reached the age of two hundred years. Their weight depends not only upon having deep, cold water in which to live, but also a large area of water in which to swim and an abundance of food; another factor which has much to do with their weight being the amount of natural vigor which they inherit. As some are large for their age and some stunted, it is, consequently, difficult to tell the age of a trout from its weight, although the average weight is about one ounce the first year, eight to ten ounces in two years and one pound in three years.

In color they vary from all shades of olive, purple, crimson, and gold to the darkest of dark greens, those that live in streams that have gravelly or sandy bottoms having the brightest colors, and those living in streams with muddy bottoms having dull colors, the males during the spawning season having fiery flashes of the deepest crimson upon their shapely sides and lower fins, and the females brilliant silver marked with orange and purple spots, which are often dotted in the centre with crimson.

Few anglers sufficiently appreciate to what an extent the sense of sight is developed in most fishes. If you will take time to watch a trout you will notice that he is always on the lookout, generally with head up-stream, body motionless, and fins moving just enough to keep him from floating with the current. Let, however, your body or your uplifted rod, or even your line, cast a shadow across his pool, and in an instant he is speeding in alarm to his lair. Even the shadow of a butterfly or a low-skimming swallow will often make him scurry into deeper water or under a bank. His sense of taste is also largely developed. If the bait is a piece of meat it must be fresh and sweet, for he will touch no carrion food, and if an artificial fly is thrown to him he must be hooked before he tastes the gritty steel. It is for this reason that quick striking is necessary in rapid water, as then a trout at once closes his mouth on the bait. His sense of feeling, when it is a vibration which is the result of some concussion, is also acute. Approach the bank over his pool with a

heavy tread and the chances are that you will find no trout. If, however, you will pick your way carefully, and if necessary go on all fours on account of shadows, you will find him sleepily moving one fin and then the other without any thought of danger. Sit motionless in a boat and you can talk, whistle, or sing as the mood takes you, but drag something along the bottom of the boat and he will instantly take alarm. The concussion, however, which originates upon the bed of a stream and below the fish will not disturb him nearly as much as when the vibration comes from above. In wading a stream, however, walk carefully so that you will disturb few stones and loose boulders and your success will be greater.

To fish successfully for a trout his habits must be known. Remember, however, that his habits in one locality will be very different from the habits of those in a neighboring stream or pond; that in one place he will only take a fly on the surface and in another will only take a sunken fly. Clear, swift-running streams, whether large or small, which are filled with boulders or have gravelly bottoms, are the places that they love, the banks of these streams being their special hiding places, the larger trout living under tree roots projecting from the shore, under hollows in the banks, in deep holes made by some obstruction in the current or where the froth of the stream gathers; the smaller trout living in the ripples, and the fry in the little feeders emptying into larger bodies of water. In the spring and early sum-

mer look for them among the rapids, or in the eddies along the banks, and during the hot weather of summer where the water is cold and deep. About September they seek the pools along the banks, and at the beginning of cold weather frequent the clear, shallow waters near the heads of the smaller streams. When the spawning season approaches in September, October, or November, which varies according to the temperature of the water, look for them in clear, cool spring water brooks flowing over gravelly bottoms. Here the female deposits her eggs in a slight depression which she makes in the sand by fanning away the smaller gravel with her tail and carrying away the larger pieces in her mouth, the male then covering the eggs with his milt. After this the male and female cover the eggs with gravel and then the female makes another depression in which to deposit other eggs, while the male watches her from his hiding place along the shore. This spawning season lasts from three to six months, and after the eggs are deposited neither fish gives any thought to the ova, which hatch in about eighty days, the young taking care of themselves as best they can, as the food bag sustains life for the first thirty or forty days.

The food of the trout consists of beetles, grasshoppers, worms, flies, grubs, moths, mosquitoes, caterpillars, the various larvæ found in decaying wood and the water bugs which live under the rocks. No fish is a more persistent forager for food, and when he is hungry he will eat whatever he can get, even his own spawn offspring. Nothing, whether great or

small, comes amiss, whether chipmunks, mice, frogs, or minnows, the only puzzling thing being why they never attempt to seize skippers, water sprites, and whirligigs, which skip about over eddies and pools, apparently without any fear of trout or any other fish. For bait, therefore, anything is good. If you cannot get an insect cut up some fresh meat or use a trout's eye, a piece of his throat, his belly fin, or even a bit of red flannel.

A good time to cast for brook trout is just before dark, as insect life is then the most active, especially black flies, moths, millers, and mosquitoes, and the dampness of the evening as it settles down forces many of these into the water. At this time, too, as there are no shadows, his feeling of security increases. During the daytime, in a trout's energetic search for food, you will often see him chasing frightened minnows over shallows or leaping into the air for black flies and mosquitoes. At other times you will find him lazily swimming where the water is purest, or in a quiet pool overhung with alders where insects are constantly falling. It is here that the slow striker is successful, for the trout now comes leisurely to the surface, and after lazily taking the fly in his mouth slowly returns to his lair in deeper water. At other times you will find him at the mouth of some rivulet waiting for food to be brought down from the forest trees, or breasting some rapids for insects caught in the current, at other times getting a supply of oxygen in white-capped water. In such places the eye must be watching for a swirl

on the water and the wrist ready to move when there is the faintest strike at the fly.

Remember that the secret of trout fishing is knowing where to find your fish and getting near him without alarming him; that he is more apt to be found in that part of the stream where the current carries surface food, and that in lakes and ponds he selects those spots where cold water is supplied by bottom springs, or where a cold running brook empties into it.

Remember that trout have their social sets, and that in the social swim there is always some big trout who appropriates the best hole under the banks, and keeps the smaller fish up-stream in shallow water.

Remember that it makes all the difference whether your end of the raft is over the ledge or off it; whether you drop your line in a clear, cold spring hole or make your cast over mud bottoms and weedy flats.

Remember that although trout will be found in the daytime in rapids because of their activity in searching for food, they are seldom found there at night.

Remember that until the snow water is out of the streams trout can seldom be caught; that for some unexplained reason they bite better between the new moon and the first quarter; that they are not apt to bite on still days when the sky is cloudless; that after a storm they will seldom rise to a fly, as plenty of food is then washed into the water; that on cold, blustering days they are sluggish, and that a change of weather often brings good luck.

The Exhilaration of Fly Fishing

Remember that the best months for stream fly fishing are May and June, as the streams are then at a good height for wading, and trout are then on the rise for insects and flies which are then moving about; for lake fly fishing the best months are June and September.

If you have ever waded a stream for trout you will never forget the exhilaration which comes with the rush of waters around your legs and the expectation of hooking a good-sized specimen with every cast you make. You will recall the flash of flying spray when a trout darted out from under a bank; the rushes which he made when he took the hook; the hum of the reel; the line cutting through the water; the struggle which followed, the fish going first to the bottom of the stream and then coming to the surface, all the time losing no opportunity of tangling the line about stones, weeds, and fallen trees; the landing net almost under him and then another savage rush for liberty; then a sulky fit; and when he bolted, the care you had to take not to tear the hook from his mouth, and when the line was slack how quickly you had to reel it in to prevent him shaking off the hook. You who have tried the sport with a four-ounce rod in your hand know that a fingerling will make your heart beat faster than the largest salt-water fish that ever swam.

The Rod

Fresh-water anglers divide into three classes: the salmon fisherman with his expensive outfit, the fisher-

man of lakes and ponds whose outfit is of minor consideration, and the brook trout angler with his light rod and delicate tackle. But as all boating is not yachting and all painting not art, so all fishing is not angling, and if one does not have the proper rod, reel, line, leader, flies, and hooks when fishing for trout it is little better than fishing for tin frogs in a tub of water.

There are two kinds of rods—one practical for fishing and the other useful in decorating the walls of a dining room, library or camp—one being too good to waste on walls, the other too frail and too shoddy to use anywhere else. When purchasing a rod make up your mind first whether you intend to use it for bait or fly fishing. If it is to be used for fly fishing get one light enough to feel that electric quickness in the fish which sends a magnetic vibration not only through the line and rod but through your body —an intensity of excitement one does not get with any other kind of fishing. Remember that the best rods are the cheapest, and that the best ones are made of split bamboo, greenheart, bathabara and lancewood, some being made in joints of two, three, four, or five pieces, and some being telescopic. Never get a cheap bamboo rod. When you buy one, make the man who sells it to you guarantee it, because a cheap bamboo rod is worse than the cheapest rod of any other kind. After you have cast it a few times it loses its spring and sooner or later is bent like a barrel hoop. For fly fishing your rod should not be over ten feet long and should weigh from four to six

ounces. When fishing from a canoe or on still water you want a springy rod. On a swift-running stream the rod should be stiffer, as the fly is carried along rapidly and a trout dashes out at it like a flash. If you are a skilful angler a medium light rod will do for all kinds of trout fishing, and if you want to use the same rod for black bass get one weighing about six ounces, for with such a rod you can master a ten-pound bass.

If a joint of your rod binds when putting the rod together, rub the joint against the side of your nose or the back of your ear or rub it with tallow. If the joints will not come apart loosen them with a lighted match.

The Reel

See that your reel is of the right weight to balance your rod. When fly fishing the reel should be below the handle and on the under side of the rod, so that it will require no strain of the muscles to hold the rod from turning in your hand, as this would be its natural tendency if the weight of the reel were on the top or the side of the rod. When bait fishing, however, as it is not necessary to have the rod balanced, the reel is attached to the upper side of the rod above the handle. For this kind of fishing and for trolling a multiplying reel should be used or one with a double set of cogs, so that you will get two revolutions of the spool with each revolution of the handle.

The Line

The line should be made of silk and be waterproof. These lines are of different sizes and numbered from A, the largest size, to J, the smallest size. The G thread-like size with from twenty to thirty-five yards on your reel is the best size to use when stream fishing. For lake fishing or when fishing in rapid water, the E size, with from thirty-five to fifty yards on your reel, is the best size to have.

Remember, however, that a light line on a heavy rod is as bad as a heavy line on a light rod. Remember, too, that nearly every angler is inclined to use too light a line, which is not only difficult to cast in a strong wind, but will not lay out as accurately as a heavier one.

Remember when you have finished fishing to dry your line thoroughly before putting it away.

The Leader

The leader, or the casting line, as the English call it, is attached to the end of the reel line and is the most important part of a fly caster's outfit. It is made of gut and should be from three to six feet long, according to the place you are fishing. It is generally dyed a light blue or mist color. Many anglers, however, believe that undyed leaders are the best, as they are stronger and as soon as they lose their lustre get a satisfactory stain from the water.

Carry your leaders in a metal case between two layers of damp felt and never use one when it is dry.

Snells

Before using it soak it in water until it becomes pliable, or it is liable to break if a strain comes on it.

The Flies

The flies which are attached to the leader should be about two feet apart. When two or more flies are used it is called a whip of flies, the end fly being known as the drag fly, the tail fly, or the stretcher, and the others as droppers or bobbers. The small piece of gut by which the fly is attached to the leader is known as the snood or snell, the best snells being made of silk-worm gut, which is light, strong, and nearly invisible. To prevent the flies whipping around the leader the bobbers are often attached to the leader without using the snell. This is easily done by slipping the loop of the fly through a loop in the leader and then pulling the loop out of the leader.

For artificial flies there are thousands of different combinations of colors and dozens of different sizes. There are, however, only four distinct types. One type has the wings attached to the end of the shaft of the hook, so that when the hook draws through the water the wings close as the wings of an ordinary fly would. The second type, known as the fluttering fly, has the wings attached the whole length of the shaft, so that when the hook draws through the water the wings spread out and flutter instead of closing on the hook. The third type, known as hackles, have no wings and are made to represent caterpillars and other larvæ; and the fourth type, or hackle flies, so called, are hackles with wings and sometimes with

tails. Most of these artificial flies are made from the feathers of birds and the fur of animals. Others are made of gold, silver and bronze tin-foil and of gold, silver and brass wire.

In picking out your flies a good rule to follow is to use those which resemble as nearly as possible the kind of insects the fish live on at the season of the year you are fishing. For this reason study the insects along the shore and make up your cast with this in mind.

Remember that during March and April the dark and dull-colored flies are generally the most effective; that during the latter part of May when the days begin to get warm and through June the brightest-colored patterns are generally the best; that in July the light-colored flies should be used, and in August and September flies with sombre hues.

Remember that small flies and plain colors should be used when the day is bright and the water clear, and the brighter and larger patterns when the day is dark and the water deep and dull.

Remember that as twilight approaches a white miller or a bright-colored fly is generally effective; and when you are fishing on a waterfall or in churning waters, that a black fly on the white surface will often draw a trout from under a bank where he has been lying in wait for a grasshopper or cricket.

Remember that on small streams small flies should be used, and the larger flies on ponds, lakes, and in rough water.

To preserve artificial flies from moths keep them

in a tin case with plenty of ground black pepper or camphor, or wrap them in a newspaper.

The Hooks

Many anglers will only fish with a hook with a flattened curve. Others want the point of the hook on the same line with the shaft of the hook; and others want the point bent to one side. Others want the shaft straight and others want it curved. Others insist that the barb of the hook must have an outward projection; and others that it have an inward projection. Some will only use steely blue hooks, others brown enamelled hooks, and others black or japanned hooks.

Many anglers, too, have their special theories about the size of the hook to use. These are numbered from 12°, the largest size, down to 1° and then from 1 down to 18, the smallest size. For salmon fishing use number 12° down to number 1°; for black bass and pickerel number 1 down to number 6; for togue, longe, and lake trout number 4 down to number 6, and for trout number 6 down to number 14, according to the size of the trout you expect to get.

Casting a Fly

If possible, face the sun when trout fishing, so that your shadow will not fall upon the water. When wading a brook or fishing in rapid, foamy water walk down stream, and be careful not to stir up more sand, mud, or gravel than necessary. When fishing

A Good Place for Trout

on a broad, silent river it makes no difference whether you go up or down the stream.

When casting use all the line the width of the stream will allow and keep out of sight where it is possible. Never neglect the sides or the middle of the stream, and cast in every part of each pool, even the shallow places, for trout, especially in the spring, often go into shallow water to sun themselves.

In making a cast do not work your arm as though you were signalling an electric car. Remember that the wrist does it all. Send the flies out and not down, making your cast with the idea that the end fly is to strike some imaginary object which you have marked in the water.

When casting be sure that the line has time to stretch out to its full length behind you before you bring it forward. This is the one secret of being able to make a long cast.

Remember when casting that you must not only make your flies drop on the water naturally, but must keep the line and leader taut. You are then ready to strike if you get a rise the moment the flies touch the water. Do not drag the flies through the water, but trail them to the right and left by slight jerking movements, doing it gently, so that they will seem alive, and not bunches of feathers. In clear, smooth water let them sink a little, then move them along quickly.

Remember that striking is simply a quick turning of the wrist in order to move the fly a few inches along the surface, and that this is not in any sense a

jerk, the slightest movement of the hook being sufficient to fasten it in the mouth of the fish, as his resistance helps hook him.

Playing a Trout

When you get a rise wait till you feel your fish. If you are a beginner your enthusiasm will, probably, make you forget how delicate your outfit is. If you strike hard you will very likely break your rod, and if the fish is a small one you will probably send him into the next county.

If you have a rise and fail to hook your fish wait a minute before making another cast and then cast again in the same place.

Don't let your eye wander away from the stream. If a trout rises to the surface mark the spot, but do not be in too much haste in getting there. Remember that a master angler is seldom in a hurry. Make your cast a little short of where the rise was, so that the trout will have a better chance of seeing the flies when they strike the water.

Remember that casting a minnow is very different from casting a fly; that if you are to make a long cast with a minnow it must be made to the left or to the right. When casting with a minnow do not use the reel, but pull out enough line for the cast, and let the slack go with the cast.

As soon as you get a strike take the rod in your left hand in order to have the right hand to reel in with and later to land your fish with. If it is a large trout turn the rod over so that the line will be on

the under side of the rod, as in this position the line only pulls through the rings and does not press against the rod when it bends.

If you have fastened your fish and he pulls hard give him line, but make him earn every inch of it. When he gets tired reel him in, but look out for his last break, for nearly every trout, no matter how

A Day's Record

tired he may be, will make a final, vicious rush for liberty, and his capers in his last struggle will often end in his escape.

Landing a Trout

Head your fish away from boulders and tree roots. Keep the line taut and do not nervously hurry the play. If you have hooked a good-sized trout in quick water work toward him, reeling in as you move along. Then, after leading him back of some rock where the

water is not swift, reel in all but six or eight feet of your line and reach the landing net under him, holding your thumb on the reel in case he makes a rush.

Never let a trout die in your creel. Before you take the hook out of his mouth kill him by striking him a sharp blow on the head.

CHAPTER VIII

SOME BLACK BASS, SIR, THAT I DIDN'T GET

ENTHUSIASTIC black bass anglers claim that inch for inch and pound for pound the black bass is the gamest fish that swims. There are two varieties, those with large mouths and those with small mouths, both varieties being found in every state east of the Rocky Mountains. Throughout the South and Southwest they are known as trout, in southern Virginia the large-mouthed variety being known as chub, in North Carolina as white salmon and trout perch, and in the Northwest as green bass.

Patience is Everything

The prevailing color of both varieties is olive green, which is distinct on the back, lighter on the sides and fades into white on the belly. This color, however, varies in different waters from almost black to a light or yellowish green, the small-mouthed variety usually being darker than the large-mouthed.

In the spawning season, which comes in the spring or early summer, according to the temperature of the water, the parent fish watch and protect the spawn and afterward the young fry, which grow to be from three to four inches long the first year, from eight to ten inches long when two years old, and mature when three years old. The average weight of the small-mouthed variety is seldom over five pounds and of the large-mouthed seldom over seven pounds, although in Florida they often weigh fifteen pounds.

For the first few months the young fry live on crustacea and other animalcules and afterward on insects until they are a year old, the second year feeding on crawfish and young minnows, and then on bugs, grasshoppers, insects and smaller fish. When bass fishing look for them just below ripples and rapids, on the edges of weed patches, along spurs of land jutting out into the water, under projecting banks where the water is deep, near submerged trees and driftwood, just off gravelly shoals, or around isolated rocks and boulders where there are eddies.

The fishing season in the central and northern States is May, June, September, and October. During the warm weather, when fishing for them on streams, go soon after sunrise, but never during the middle of the day unless it is dark, cloudy, or cold. Use a multiplying or self-winding reel. In rocky, swift running streams, as the bass is usually the small-mouthed variety, a light rod should be used, which should never be over ten feet long, and should weigh

from five to seven and a half ounces. When bait fishing the rod should be nine feet long, and weigh from seven and a half to eight ounces.

The leader should be from three to six feet long, of silk-worm gut. Have about fifty yards of line on your reel and use a small swivel and light sinker. The line should be number E for lake fishing and number E or F for stream fishing. When fly fishing many anglers use a self-winding reel, and for minnow fishing a multiplying reel. When fishing with minnows use braided raw silk line, as the twisted line is apt to kink. The minnows should not be over four or five inches long, and when hooking one put the hook through the back near the dorsal fin.

The hook should never be larger than number one or two even for lake fishing, especially if minnows are used as bait, as small-sized hooks are not as apt to kill the minnows. When stream fishing the hooks should be as small as number six. Artificial flies should be larger than the ordinary trout flies, and larger flies should be used for lake fishing than for stream fishing. If you are fishing in rough water bright-colored flies should be used. On bright days and in clear water the flies should be small and of dark or neutral tints, and in turbid or rough water they should be the larger and brighter varieties.

When casting let the fly settle lightly on the water and then skip it over the surface by slight jerks or zigzag movements, occasionally letting it sink in the water at likely spots. If the current is swift let the fly float with the current and then skit-

ter it back or reel in for a new cast. Two or three casts are enough in any one place. When the fish are rising freely make your cast quickly and let the flies settle only for a moment on the water. When casting with minnows reel in the line until the minnow hangs about eight feet below the tip of the rod, then with the thumb on the spool of the reel make a quartering cast to the right or left, keeping a gentle pressure of the thumb on the spool to prevent the line overrunning, stopping the reel when the minnow touches the water by a pressure of the thumb. In still water use a sinker and a float and keep the minnow about a foot from the bottom. In rapid water keep the minnow near the surface. After letting the minnow swim about for a few moments, reel in slowly and make another cast. Artificial minnows or spoons should be cast in the same way. If a bass takes the minnow let him run with it a short distance and then stop the reel with the thumb. If the fish gives a few short jerks let him have more line and then stop the reel again. If he pulls steadily hook him by a turn of the wrist as in trout fishing. If he goes off with a rush and at the same time pulls steadily you may be sure he is hooked.

If there is a swirl on the water the fish either has the fly in his mouth, has missed it, or has already thrown it out, for it is seldom that a rise is seen before the fish has reached the fly. Often, too, the fish takes the fly without any break of the water, especially if the fly is below the surface. In either case strike at once by slightly moving the rod either to

one side or upward. This will be sufficient to set the hook if your line is taut. If your line is slack when you get a strike make a long upward or side sweep of the rod, but even if you succeed in hooking the fish the chances are that he will shake the hook out before the slack can be reeled in.

The moment the fish is hooked elevate the rod to an angle of forty-five degrees, putting your thumb on the spool so that the fight will be between the fish and the rod rather than between the fish and the reel. Never give an inch of line unless it is taken from you. Even then give it grudgingly, and reel it in again as soon as possible, so that the fish will be held on the spring of the rod until he can be reeled into closer quarters. Do not be in a hurry to land him; the longer he resists the longer the sport will last. If he is well hooked and there is a proper tension on the line he cannot get away, and if he is tenderly hooked it is absolutely necessary to handle him carefully. If he leaps out of the water let the rod straighten as he falls back into the water, for if he falls on the tightened rod he is almost sure to tear the hook from his mouth and escape, this being one of his wily tricks. The moment, however, he touches the water, elevate the rod until the line is taut and keep him as near the surface as possible.

If you are fishing from a boat keep the boat in deep water and make your casts toward the shore, letting the fly sink several inches below the surface at favorable places.

Remember that during the summer large black

bass go in pairs, and if you get one you are liable to get the other.

In trolling for black bass use a small-sized spoon hook. Tie on two or three gaudy flies, use plenty of line, and have your guide paddle about two miles an hour, taking a course along the edges of gravel bars or where the stream or lake deepens suddenly. If you are using minnows for trolling put the hook through both lips of the minnow, then pull enough of the gut through to put the hook through the lips a second time and make a loop to hold the lips together, and then put the hook through the back of the dorsal fin with the barb pointing upward.

"A three-pound pull and a five-pound bite,
An eight-pound jump and a ten-pound fight,
A twelve-pound bend of the pole—but alas!
When you get him aboard he's a half-pound bass."

CHAPTER IX

SOME LAKE FISH THAT PLAYED WITH ME

Land-locked Salmon

THE land-locked salmon, the winanishe, the wananishe, and the ouinaniche of Canada are the same fish. Although many of these fish are land-locked, as the name implies, most of them have easy access to the sea. The name land-locked, therefore, is a misnomer. In weight they average from two to three pounds, although in some localities they weigh as high as fourteen pounds. They are like the ordinary salmon, but are longer in proportion to their weight than the trout. The color of the young fish, when first taken from the water, is bluish olive on the upper part of the body, this turning into a silvery, steely blue, and silver on the lower sides, which fades into white on the belly. The color of the older fish, when first taken from the water, runs from a deep black on the back through bluish green on the sides to

Satisfied with His Catch

silvery green and silvery white below, these colors soon after the fish is out of the water taking a green and purple bronze tint which shades into a rose color, the fish when in the water showing oval black spots when seen in a good light. These colors, however, vary somewhat according to the location and the season of the year, the sexes having no marked difference in color except during the breeding season, when the males are brighter.

Their habits are those of the salmon and trout combined, but they have ways of their own which must be known if you are to fish for them successfully. They live largely on small fish, are wary and capricious, and are much affected by changes of weather and the kind and amount of food they get, as they have omnivorous appetites. As their fins and tails are largely developed they are very gamey. In the spring and fall they live in the swiftest waters, and in the summer when the water gets low it is necessary to fish for them from a canoe or boat, as they frequent the deeper parts of the lakes and ponds, lying singly under rocks or in the pools among the rapids. From these places they forage about for the schools of young fish swimming in the swift currents, or they circle about among the eddies after flies and insects caught in the patches of foam. At this season it requires both skill and brains to make them take a fly, but if the cast is well made the angler is often able to entice them from a great depth of water. By the end of September the breeding season begins, as the ova are then well developed, and the fish make their way to

their spawning beds on gravelly shallows where there is a steady current.

When fly fishing, while they are coming up the streams from the sea in the spring, use number twelve or thirteen hooks and small-sized salmon flies or large-sized trout flies. Never use flies which have much red on them, the best combinations of colors being yellow, black, or gray on a yellowish body. Because they are a gamey fish the leader should be extra strong, some anglers using a salmon gut leader on account of the great strain which comes on it if the fish leaps when the line is short and taut. The size of the line depends, of course, upon the kind of rod used. This line should be fifty yards long, at least, and to be safe it should be seventy-five yards, on account of the long runs which the fish may make. To carry so much line the reel must be larger than the ordinary trout reel, and to avoid having it too heavy for the weight of the rod some anglers use thirty yards of number E line and to this splice number G line for the business end. The kind of rod to use depends largely upon the fancy of the angler. Some use a heavy rod sixteen feet long and others handle the same fish with a light trout rod, the point to keep in mind being that the fish is a stubborn fighter and that the rod must be strong enough to recover a long line quickly in a strong current.

In casting use the same methods as when trout fishing, and when you get a strike make the same orthodox turn of the wrist, but strike hard, as the mouth of this fish is tough.

Remember that he often takes a sulky fit and that the more he is kept moving the sooner he will kill. Therefore, keep him well in hand with as heavy a strain as the rod will stand, for he will fight to the last. At no time will you know what he may do next. Even when he comes to the surface and shows his white sides, the sight of the landing net may nerve him to what pugilists call a game finish. No rule, however, for playing him can be laid down, except the golden one to keep the line taut.

Never, when trolling, use a hand line if you have a rod or can borrow one, for when you are taking in line as if it were going over a revolving drum, the fish has no chance to show his gaminess, and all the pleasure you get is to feel a wiggle and wonder what you've hooked. With a fly rod in your hand you get the play of the fish as the rod bends, the strength of the line is tested, and when the fish leaps into the air in his attempts to shake the hook from his mouth, it gives you sensations which you never get when you are pulling in line as if you had a tow astern.

When trolling have out about fifty yards of line and have your guide paddle the canoe along slowly. If it is in the spring have him paddle around the rocky points which jut out into the water, and if it is in July or August put a sinker on your line and paddle where the water is deep.

Lake Trout

Lake trout, which are most successfully fished for by trolling, are found in all the Great Lakes of

the United States and Canada and in most of our smaller lakes and ponds. In Maine and New Brunswick they are known as togue, in Vermont as longe, in the Adirondacks as trout and in other parts of New York state as lake salmon, lake trout, and salmon trout. Some are as black as tautogs, some are brown or gray, and others are brown with crimson spots, the general color varying from a dark gray to black with more or less of an olive tint. They are a deep-water fish, and after the temperature of the water changes in the spring you are only sure of finding them in the deeper parts of the lakes and ponds.

The best months for lake trout fishing are May and August. They are also often caught in the early part of June, and old lake trout fishermen will tell you that they can always be caught when wild pear trees are in bloom.

Remember that while this fish lacks the dash of the land-locked salmon he has a dogged determination of his own, and although it is difficult to tell his swirl or rise from that of a trout or land-locked salmon, he shows his family characteristics as soon as he is hooked and starts for the bottom.

Other Lake Fish

Another common lake fish is the white perch, with his silvery white sides—a good fish to have a try at when the trout streams are far away and railroad fares are high. They can be easily caught by still

fishing or by trolling with live bait, and are often successfully fished for with a trout rod and fly.

Another common lake fish is the pike, with his long body built for speed. This fish, which is sometimes two and three feet long and weighs up to eighteen and twenty pounds, is found in those lakes where there are long, wiry rushes or yellow lily pads. As they are not particular about their food they will eat anything which comes in sight, if it is alive and can be digested. They are, however, a sharp-eyed, sly fish and are most successfully fished for by casting or by trolling.

Another common lake fish is the sluggish pickerel. They are found in brackish waters, in shallow places where water grasses grow, and in sluggish waters where trees have dropped over into the water. They generally go in pairs and dart about in search of food. As they are greedy feeders they are ready at any time to devour smaller fish, this fish and the black bass being the greatest enemies of the trout. Being a stupid fish, anything can be used for bait—a minnow, a frog, a piece of pork, a slice of bacon, a red flannel rag, or a spoon hook without bait. If you hook one with a rod and reel he is very apt to rush off savagely with fifty or sixty feet of your line and make almost as sharp a struggle as if he were trout.

When fishing for perch, pike, or pickerel you do not need any special kind of rod, line, or hook. Go to the nearest village grocery, buy a few knots of the cheapest line and half a dozen hooks—two for a cent.

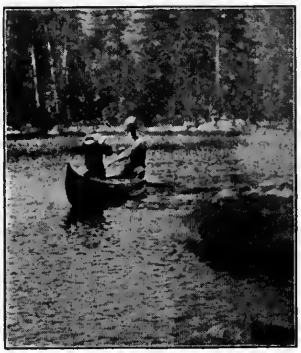
Pound out a piece of lead into a sinker and for ten cents you have an outfit. Bear in mind, however, that this is not angling which is a science, and that it requires brains to make a gamey fish take an artificial fly.

Enough for Breakfast

CHAPTER X

SOME DEER THAT I HAVE MET

THE ambition of most every sportsman is to have hanging in his hall the head of a deer with a good pair of antlers. This head, if he is a true sportsman, he always points to modestly, but it generally paves the way for a story of the good shot he made. As deer have little fighting blood in their veins they are timid by nature and no match for the larger game of the forest, their swiftness in getting through the woods being their one protection against approaching danger. Against wolves, wild cats, lynx, and bobcats this swiftness is of no avail, and every year many a deer is killed by these animals, even a fox, if he can get a doe in deep snow, being more than a match for her. The bucks, during the mating season, however, have many a fierce battle among themselves, and one often comes upon places where the ground



An Unexpected Shot

has been torn up in these contests, bucks with only a single spike to their horns being generally more than a match for older bucks with spreading antlers.

After a buck is three years old the horns do not in any way indicate his age. The first season there is a knob under the skin, the second year a small spike breaks through, the third year there is generally a single prong on the horn, and not until the beginning of his fourth year, or when he is three years old, does he have a full spread of antlers, this year having usually two spikes or points, the following year perhaps five, and the next year perhaps only two again, and occasionally you will find a buck without any horns and once in a while a doe with horns. After this third year the age can only be told by the general appearance of the head, the teeth, and the grayish color of the hair. From spring until September, and sometimes until November, these horns are covered with "velvet," which peels off when the veins in the horns dry up and the horns get bony and hard. At this time the horns are often worn to a polish by being rubbed against limbs and trunks of trees, and in the latter part of November or early December, and sometimes as late as January, they "ripen," as it is termed, and fall off.

The inability of a deer to put up a good fight, except when they are fighting among themselves, has made his sense of smell and hearing particularly acute. So sensitive is this sense of smell that if you are in his forests with the wind blowing toward him and the atmosphere is right he will know it

although you may be a quarter of a mile away. He has also a keen sense of hearing, and although you may steal through the forest so silently that you do not hear yourself move, he will hear you. Another characteristic which is more largely developed in a deer than in most animals is his inquisitiveness and curiosity, this being so great that he will often stand and watch you when, if he had only scented or heard you, he would have sought safety in flight. This curiosity is not the result of stupidity, but because a deer, in his determination to know something about what he sees, acts as a person would under similar circumstances. In addition to these three characteristics, of which one must have a proper appreciation to be able to hunt them successfully, one must also keep in mind that a deer has more than the usual amount of intelligence and shrewdness.

Like all other wild animals, they have many inherited instincts, but much which is supposed to be instinct is what they have learned, when fawns, from their mothers. If you have ever come suddenly upon a very young fawn you must have noticed how its innocent, questioning eyes did not fear you, for only when its forest mother has taught it that the scent of man is not a scent of the woods does it know that this means danger. If you have ever watched a doe with her growing fawns you have seen her, very likely, teaching them to jump dead wood with their wabbling feet. You may have watched her hide and then call them, or have heard her give the hoarse

danger whistle, or have seen them following the white flag of her tail as she plunged through the bushes—things which had to be taught them, if they were to grow up to lead the life of the woods.

Like men, all animals change with the conditions which surround them, and many a guide can tell you how easily a young fawn can be domesticated, for it is only necessary to get into its head that it is not to be hurt, and it will follow you almost as soon as you have captured it. Where there is much still hunting deer soon learn that danger lurks on every side, and, adapting themselves to the new conditions, are on the watch most of the time, lying down where they can see their back tracks, feeding less during the day and more at night, running beyond the point where you can head them off, hiding in thick brush and letting you pass, and when the open season comes, going farther back in the forests into higher, rougher, and more bushy ground. By swift reasoning which has come from experience they know as well as the sportsman when the open season begins and when it ends, just as cattle know when it is time to be pastured in the mowing and become restless, or the race horse knows when the circuit opens, or the pedigreed dog when the annual bench shows begin. Because of this reasoning power a deer not only knows when he can safely stand among the lily pads and watch a canoe go by, but also when he must keep out of range of the rifle among the mountains or foot hills in the denser parts of the forests, or must move about in his usual haunts with the

greatest caution. It is because of this that the summer sportsman, when he returns from his vacation, tells of the many deer and moose he has seen, and that those who have their outings during the open season tell of many a day's tramp with not a single shot at a flying white tail.

The Habits of Deer

Like most birds and animals, deer are not migratory, but confine themselves to special localities. Within these confines no other deer "dare go a-poaching" except during the mating season, when the bucks run wild. In their own territory they have paths and runways through brush and over fallen dead wood to favorite feeding grounds and springs. If they are where food, water, and ground for lying down are near together, and it is timber land, their daily range is seldom over half a mile in any direction, and if open ground, seldom over a mile. If their food, water, and lying down ground are far apart, they will often go three miles for food, a mile from there for water and another mile in a different direction to lie down, sometimes changing this range every day, sometimes every few days, and sometimes spending a week on a few acres of ground, this change of range, however, being often less than a mile, and seldom over three miles. In following a deer, therefore, you will always be within a range of three miles from where you started. When they are not on favorite feeding grounds there is no place more certain of finding them than burnt land. Why they go there has never been

satisfactorily explained, for it is not because of the tender shoots which spring up, as they are often found there as soon as the ground has cooled.

During the fall and early winter they frequent hard-wood ridges in search of beechnuts and acorns, and when the snow is too deep to paw away or the crust breaks through and cuts their legs, they herd in cedar swamps, where they are protected from the storms and winds—these deer yards, so called, being innumerable deer paths, sometimes two or three miles long, crossing and recrossing each other in every direction. Some of these paths go to favorite springs, as they never quench their thirst with snow, and others to feeding places where they browse upon cedar boughs, on the moss hanging from the branches of trees, on the twigs which are just above the snow, on the bark of various trees, particularly basswood and maple, and on the tops of the trees which have fallen in the tangle of the swamp. When the snow begins to disappear in the early spring they again make for the south side of the hard-wood ridges for nuts, and when new grass shows itself, they feed on this until the buds appear on the trees, when they gradually work their way into the valleys nearer the streams and ponds, in summer time feeding where succulent roots of lily pads and other aquatic plants are. To these places they love to go at dusk to escape the flies, and to splash and paddle in the water, in the middle of the day resting in shady nooks in the forests.

In the spring the doe generally gives birth to two fawns, with which she remains during the summer.

The Mating Season

In the early fall when the "running season" begins the bucks, early in the morning and late in the afternoon, begin to follow the does, at first on a walk with heads down, but as the season advances and their ardor increases, following them at all times of the day with a half-walk and a half-trot, varied at times with a clumsy gallop very different from their usual graceful canter. During the height of the season it is no uncommon thing for a doe to be pursued by three or four bucks a short distance apart, the largest buck heading the procession. It is at these times that the bucks battle with each other, and then there is an elevation of hair and a clattering of horns which is interesting to watch if one can keep his finger off the trigger long enough to see it through. After the mating season, which begins in September or October and generally ends in the early part of December, the bucks and does forage by themselves, often two bucks being seen together, often two does and often the fawns of a doe. At this time they are found along tote roads and at abandoned lumber camps or in grassy openings among the trees, or farther back in the thicker woods nearer the foot hills, going only to the streams and ponds for water; sometimes, in the early winter before the snow gets deep, staying near a lumber camp, where they browse at night on the tree tops felled by the loggers during the day.

In rainy, snowy, or cold, blustering weather they spend the greater part of the day in some brush patch, windfall, sheltered ravine or gulch, where they

stand most of the time with their heads down. When a storm is coming they seem to know it, sometimes a day ahead, by some sort of instinct or perhaps because of the sensitiveness of their sense of smell, and prepare for it by filling their stomachs with food. At these times they are uneasy and continually on the move and if it is a heavy storm they get into a thickly wooded swamp, where they lie down under a tree having low branches or under brush; and stay there until the storm is over or hunger drives them out, these places being so small that only a practised eye can detect them.

As they are browsing animals and live on buds, twigs, and the leaves of a variety of shrubs and trees, they care little for grass, although when it is young and tender and the browse is old and tough they eat it, but never sun-dried grass—the nuts which they care for being chestnuts, beech nuts, and acorns, which they begin to feed on as soon as they fall, often changing their ranges to be near them.

In many ways they are like domestic cattle. They chew their cuds in the same way, but unlike them they feed only for a few minutes at a time, and then look around to see if anything is approaching. The sound of falling branches and other natural sounds of the forests they pay no attention to, but if they hear any unusual sound they twitch their ears nervously and hold them forward like trumpets. If a twig snaps they immediately look for danger, their eyes, ears, and nose at once questioning the sound; and if they begin to swing their heads you may be sure that they

have become suspicious and are ready to break for cover.

As a rule they feed in the early morning and again just before dusk, except during stormy weather, when they feed as soon as it clears away. Although they are often on the move at night they seldom feed at this time unless there is a moon, and if they are in a section not frequented by sportsmen they feed during the night and day. If, however it is a country much shot over, they do little feeding during the day when there is a moon, but "follow the moon," beginning to feed soon after dusk when the moon rises early, and lie quietly in some grassy opening in the woods during the day.

Still Hunting Deer

Next to the fascination of hunting wild animals in which there is an element of danger, comes the fascination of still hunting deer. This is the most scientific of all hunting, as in this game of checkers the sportsman has to make moves on the checkerboard, which will checkmate an animal whose scent, sight, and hearing are far superior to his own. It is, therefore, no one-sided game, and the man who thinks that a deer is a creature of dense stupidity has only to try to get the best of one of these animals by some trick to find out that he can play the same trick only once. As city folk, however, have few opportunities of learning the ways of the woods, still hunting is largely confined to backwoodsmen and frontiersmen.

Did you ever "drive" an island upon which you had just seen a deer land? You will remember you were stationed at the lower end ready for a shot as soon as the deer should jump into the water; that as you sat in your canoe hidden among the bushes, the noise made by the guides coming down the island sounded like a hurricane, and that suddenly Mr. deer was seen quietly swimming for the mainland at the end of the island from which the guides had started, having watched from behind some boulder their manœuvres.

We know, too, that a deer does not lack in cunning. We know that when followed he will often circle back to the leeward of his trail, where he can scent or see approaching danger as it goes by, and that when we reach the place far ahead where he turned back, he will be miles away in the opposite direction. We also know that a deer surprised in the open will keep a tree or a boulder in the line of fire until he is safe in a thick growth.

Perhaps you will not believe the story which one of my guides tells of his experience in still hunting, as you may not know Fred, but I have hunted with him for years, have never seen him under the influence of liquor, and have always found him truthful. As Fred tells it, he was following a deer on the snow along a hard-wood ridge, when he came to a place where the deer had circled back and gone down into the valley. Here Fred was able to get a shot at him as he ran up the valley, but did not hit him. Being a quick thinker and believing the deer would

probably double on him again and make for the next hard-wood ridge, he stopped following the trail and cut across the valley to the other ridge. It is this part of the story which has a briny taste, for Fred will make an affidavit that, as he was going around a large boulder on the top of this second ridge, where he intended to hide, the deer was coming with a rush around the other side of the same boulder, apparently intending to hide there also. "He was coming fast and was on the jump just as I was," said Fred, "and as I had already fired at him, when I saw him I'll swear to God I thought it was his ghost sure." When I asked Fred what happened he said the deer jumped over him, and made for a growth of pines in the valley beyond, and when I asked him why he didn't shoot him, he looked foolish and said, "For a minute I didn't know where I dropped my gun." Of course, it was a careless thing to do. This story I believe, as Fred has long been a guide of mine, and I have summered and wintered with him.

Although deer stalking, as our English cousins call it, is fascinating sport, we know, when we come to analyze it, that it is not the game of checkers, after all, which makes us love the sport—that the owner of a gun who cares nothing for the woods if he does not get all the game he wants is not a real sportsman, and never a still hunter. The man, however, who, when once in the solitude of the forests, finds that the time passes quickly while waiting on some feeding ground, or who, because he is a nature stu-

dent, lets his shooting get tucked away in a corner of his thoughts, is the one to whom still hunting is a pleasure, for the secret of this kind of hunting is not wholly hearing the sharp breaking of a twig which makes one quiver with restrained excitement, or the rush of a deer through the undergrowth which makes

Rocky Mountain Blacktail

one's heart beat quicker, but the something about the woods which has added to his calibre as a man.

When to Still Hunt

Although you may know the habits of deer and when and where to look for them, you will find that there will be many a miss and many a spell of hating yourself before your vacation is over.

The best time for still hunting is in the early

morning, as deer are up and about at daybreak. If there is a moon it is also a good time for still hunting late in the afternoon, as the deer, having rested through the day, are then beginning to move toward their feeding grounds. Just after a rain is another good time, as they are then roaming about to get warm, especially does with their fawns, or just before a storm, as they are then restless and wandering from one place to another. During stormy weather it makes no difference when you go, if you hunt for them in cedar swamps. Just after the first snowstorm is also a good time, as you can easily see their tracks; this kind of still hunting has a fascination peculiar to itself, as there is always the expectation of coming upon your deer at every turn you make, and every time you go over a ridge.

The best month for still hunting is November, and the best part of the month is during "the dark of the moon," for then they only feed during the day. During this month the bucks are roaming about and the does are trying to escape them, and as the leaves are now off the trees, one gets a better shot; the ideal time being just after a rain when the leaves have become so wet that you make little noise in moving about—an especially good time being when a strong wind is blowing and dead branches are falling, for at such times deer will not notice the twigs which you break under your feet.

Always wear moccasins when still hunting.

Remember that weather conditions have much to do in carrying scent and sound; that during heavy, foggy, or muggy weather, or on a warm, cloudy day after a rain, there is little air stirring, and scent and sound are not carried far.

Remember that on a still, warm day in the autumn, when you can hear a squirrel scamper over dead leaves a hundred yards away, you might as well stay at home.

See the Deer First

Remember that the most important thing is seeing the deer before he sees you. This, more than anything else, is the secret of success, and there is nothing so hard to do.

Remember that in a country much hunted over, a deer's sense of hearing becomes more acute than his other senses, and that this is what makes it so difficult to approach him. Even when the leaves and twigs have been softened by a long rain the faint, crushing sound of your moccasins will reach his ears for a longer distance than you think possible, especially if he happens to be lying down so that he gets the sound as it is carried along the ground.

Remember that a deer is not particularly quick in recognizing a motionless object, and, if not alarmed, will not distinguish a man from a stump if the man is seated and does not move. When, therefore, your guide is driving a deer toward you it is not necessary

to conceal yourself if you keep quiet, but be careful not to change your position for a better shot.

Remember that the direction from which a noise comes is often perplex ng to a deer, and that his curiosity to know its exact location often makes him stop after a few jumps and look back.

Remember that against the wind he cannot hear as well as down wind, but even up wind you should never relax in caution, especially as there is no need of haste.

Remember that a deer loves covert and will have it, that he loves browse and will have it, that he loves ground more or less rough, and will only be found away from it when there is better food and covert somewhere else.

Remember that the best territory to hunt over is where the ground is rolling enough for you to keep out of sight behind ridges and look down into hollows and valleys; where the timber is open enough for you to see a hundred and fifty yards in any direction; and where there is not so much underbrush that you cannot move about without touching too much of it. Such places are generally in hard-wood timber growths where there are acorns and beechnuts in abundance, plenty of windfalls, and brush enough for lying down coverts for the deer in the daytime.

Remember that there is a difference between the lying down places of deer at night and the lying down places during the day; that at night they will lie almost anywhere, but in the daytime, if they are being hunted, they seldom lie down near their feeding

ground or watering places, or where there is not a good view of the surroundings.

As deer are fond of salt, sportsmen often make salt licks, by placing handfuls of salt on the ground or in the hollows of logs, and then make a circuit of these places.

It is always good judgment to keep the sun at your back, when it is possible, so that it will shine full on the deer's coat and catch your eye more quickly than if the sun were shining in your face.

If you are in a clearing never sit on a stump or a boulder, but lean against some tree, where a deer would not be so apt to see you.

If your guide is with you and you are behind him, carry your gun with the stock forward, and if you are ahead carry it with the muzzle forward. He will not then have to be wondering whether your gun is half-cocked or not.

Not only deer but all wild animals grow uneasy at the sound of the human voice. Do not, therefore, talk even in a whisper.

If you intend to hunt along a tote road go along that part of the road which has the wind blowing toward you. If the wind is blowing toward the deer he will know you are coming long before you can get within range. Be careful not to step on dry twigs or hit a rolling stone, as a deer will get out of the way if he hears anything unusual. Get your toes in between the twigs if they are thick, and keep your heel off the ground where there are stones.

At each bend in the road and at every rise go

cautiously. Keep your gun out of sight, and only let your head be exposed while you are looking the ground over.

In looking over the top of a ridge inspect the ground layer by layer, beginning with the ridge beyond, and running your eye gradually down into the valley.

As a deer does not pose for a sculptor or an animal painter, don't look for his outline but for spots and patches of light gray, dark gray, or brown. Never mind their shape.

As a deer, on account of the brush and undergrowth which surrounds him, does not stand half as high in the woods as in a park, look low for him.

Glance at all open places among the trees, as deer like grassy spots. By stooping down and looking under the thick branches you will get a better view.

Don't look too far ahead, as deer are inquisitive creatures. They are apt to be much nearer than you imagine, and unless they scent you they will often stand and watch to see what is coming.

See if the buds have been bitten from the lower branches of the trees, or if a buck has rubbed the bark off with his horns.

Don't make the mistake of covering too much ground during a day's tramp. You will be more apt to get a shot by going slowly and cautiously.

Don't rush. Remember that the scent of your body comes through the pores of your skin, and that the more the pores are open the stronger the scent is.

The less, therefore, that you perspire the less liability is there that a deer will scent you.

In brushing against twigs and bushes ease them off with your hand, so that they will not scrape on your clothing, snap, or make a switching noise in flying back.

When lying in wait for a deer at a favorite drinking place, don't watch the drinking place but the ground beyond, as a deer always looks the ground over before he goes to drink.

Don't look for deer on hard-wood ridges after ten o'clock, as they will then be lying down in some bushy place, or among windfalls, or in some "slash" where lumbermen have left tree tops and branches, among which briers and bushes have grown up.

Never lie in wait for a deer on a runway. If they are so plenty that it is worth your while watching a runway it is better to keep in motion.

Never hunt in the same place two successive days. If you have started a deer the chances are that he will not go near the place again for several days.

If you are following a deer, you will find that after his first run he will stop every little while to see if you are still following, or he will circle to the leeward of his tracks to scent you or to watch you from behind some bush or boulder.

If you cannot tell from a deer's track in which direction he has gone, try to make out the imprint of his dew claws, and this will settle the question for you.

Remember that a deer will seldom whistle if he

sees you. If he makes a short, quick whistle with every jump it means that he does not see you, but feels that he is in danger, and whistles to ease his feelings and warn other deer. If the whistle is husky and long drawn out, and at irregular intervals, it means that he has scented or heard something which he does not understand and cannot locate the direction.

Remember that the blow or snort of a deer means nothing, that sometimes he snorts when he is suspicious of danger, and sometimes because he feels particularly active. At other times under the same conditions he makes no noise.

Remember that a deer in the winter time is quite certain to lie in the sun, in the summer time in the shade, and in the autumn to lie in the sun in the cool part of the morning, and in the shade when it becomes warmer.

Remember that a deer is a creature of elegant leisure, that after feeding a while he generally lounges about with all the deliberate ease of an aristocrat; that he then surveys the landscape, then scratches his ear with one foot, then wiggles his tail, then stands still for a while, sometimes close to a succulent bush without touching it, and then moves on by easy stages, nibbling a twig here and there.

When in Sight of a Deer

When you bring your rifle to your shoulder, don't get your eye on the sights until you know what you are shooting at. Make up your mind that it is a man until you are sure that it is a deer. By making

this a rule you may prevent the accidental shooting of some sportsman, who, unknown to you, is hunting over the same territory.

Remember that the scent of man makes a deer far more uneasy than if he sees or hears him. Therefore, always get to the leeward of him. If you cannot tell in which direction the wind is blowing, moisten your finger in your mouth, and when you hold it up, the cool side will be toward the wind.

Sometimes when a deer sees you he will not run until you stop moving, and sometimes when you stop walking he will not run until you start again. In other words, it is doing something suddenly which often starts him off. For this reason many hunters bring their guns up to their shoulders slowly.

If a deer appears uneasy, don't move, but give him time to get over his suspicions.

If you see a deer pawing the ground it is probably a buck, as a doe seldom does this unless she is pawing for food.

If a deer keeps tonguing his nostrils, like a cow, you may be sure he has become suspicious and is moistening them to get a scent.

If his tail comes up and his head turns, make up your mind that he is getting ready to run, and that his eye is glancing in the direction in which he is going to make a break.

If his tail is down and wiggling nervously it is a sure sign that he scents danger.

If you start a deer don't stop to think it over, but send some lead after him, even if you think you are

going to miss him. If you can see his white tail there is an opening through the branches for a rifle bullet.

If you are a novice at the sport you will be apt, when you get your first shot, to forget the breech-sight and fire as soon as the muzzle-sight is on him.

If the deer is running through thick woods swing your gun ahead into an opening, and fire when he crosses the sights. Remember that if he is going at a forty clip, or is some distance away, you will be very apt to shoot behind him if you do not fire ahead of him.

Remember that a deer at full speed generally hugs the ground like a hare, and that you are liable to fire too high.

If you have to shoot at a deer when he is higher up than you are, keep in mind that you will be apt to shoot over him, as the angle at which you hold your rifle gives the bullet an upward flight. Curiously enough, you are also apt to do the same thing on a downhill shot, because at this time you will catch too much of the front sight. With such shots aim not more than a third of the way up from the lower part of the body.

If you have time to get a bead on a deer never aim for the middle of the body. A deer which is hit anywhere from three inches back of the shoulder to the hip, unless the backbone or kidneys are touched, will run for miles before he drops, and will often bleed internally and leave no track. The place to hit him

is just back of the fore shoulder, where the heart is. If you cannot get a shot there, aim at the hip. If he is facing you and you only see the front of his body, aim just above the forelegs, where the "sticking point" is.

Don't aim too high up. If the deer is hit in the upper part of the body the blood will fill the lung cavity before it flows out, and the deer may run a long distance before there is any blood on the ground. Even when shot through the heart he will often run several hundred feet before he drops. Remember that the worst of all shots, and the one usually made when the deer is running crosswise, is a paunch shot, or a shot between the fifth rib and the hip joint. If the deer is hit there he will run for miles and you will probably lose him.

If, when you fire, you will watch the deer closely, you will notice if he is hit that he will shrug his shoulders and draw his body up before he starts to run.

If he hugs his tail down when he runs you may be sure he is hit. If he does not do this, however, it is no sign that he is not hit, for a deer which is hit will often cock his tail up and go out of sight as if he were simply hurrying away on business. Most sportsmen and many guides will tell you that this is not so, but do not believe them.

Remember that as soon as a deer is shot he fills his lungs with air and runs until the air is exhausted, even if fatally wounded.

Pump a fresh cartridge into your rifle barrel while the report of your first shot is in the air, as the deer

may not run far, and you may get another shot if he does not hear the click of the breech-block.

The first thing to do when a deer is wounded is to do nothing. After you have fired see if you can find any blood, and if you do then sit down and have a smoke. If you do not follow him he will soon lie down, and the more the wound pains him the more careless he will be of your approach later. If you find no blood where the deer stood don't give it up as a miss, but look the ground over in a circle.

If a deer runs any distance and then falls, you may be pretty certain he is dead. But be sure he has fallen and not lain down, for if this is the case you may need all your skill to get him. If he falls and then gets up and runs it also means that you will have hard work to get him. If he falls and then struggles to rise, get to him as soon as you can, for even if mortally wounded he may get away. Do not, however, let him see you running toward him if you can avoid it, as this will often revive him.

Remember that a deer seldom runs at race horse speed, but takes springing jumps. It is, however, a much faster gait than it looks and the bullet goes much slower than you suppose. If he is in the open, catch him as he strikes the ground at the end of a jump, and if you have time, keep the rifle on him during several bounds until you get the swing of the jumps, and then fire ahead where he will next strike the ground. To get the right distance ahead and to pull at the right time is a pretty operation. A miss is never to be laughed at and a hit will give

you something to chuckle over later. If he is running low or running fast pay no attention to the jumps, but aim ahead and fire about the height his knees are when he is in the air. With such a shot you ought to be perfectly satisfied if you hit him at all, and although you may have a lofty calm, inside there will be quivers of self-satisfied excitement.

Don't let a deer fool you by dropping his head behind a log. Although his back may look like a log, you will be able to see enough of his white tail to recognize it.

If a deer does not see you, and does not have the wind to give him a scent, he is often unable to locate the place from which you fired. If, therefore, you do not show yourself you can frequently get a second shot, as he is apt to get confused, not knowing in which direction to run.

Remember that a deer is marvellously quick in seeing a motion, and can detect a very slight one as well as a very slow one. He will see almost instantly the slow rising of your head above a ridge or the slow movement of your body across the trunk of a tree, unless the motion happens to be made while his head is down. Don't, therefore, even wink when a deer is looking toward you.

If you are paddling toward a deer, and he has scented you before you get within firing distance, let the canoe drift. If you do not move it will often happen that a deer, when he sees no motion, will not be able to locate the danger even after he has scented it.

Remember that sometimes, when the wind is ap-

parently blowing toward a deer, the contour of the ground is such that there is an undercurrent of air blowing from the deer toward you, which prevents him scenting you, and that sometimes, too, there are cross currents of air which carry away the scent. It is because of such conditions that a sportsman is often puzzled to understand why a deer does not scent him.

If a deer is feeding on lily-pad roots and is deep in the mud, he will often take chances rather than move, as it is difficult for him to get his legs out of the mire. If he does start he will go slowly at first, but when he gets well out he will bolt for the woods as if fired from a catapult.

If you lose a deer make it a rule to study out how you lost him. It may take a little time at first, but in the end it will repay you. An analysis of your errors will be far more beneficial to you than an analysis of what you have done correctly.

Don't forget that it only takes one deer to make a good many tracks when alive and a good many deer stories after you have shot him.

After the Killing

Although it is considered good form to cut the throat of a deer with a hunting knife, the only hunting knife you really need is a good-sized jack-knife. If the deer is dead when you reach him there is no necessity of cutting his throat, as animals bleed only a trifle from the throat after death, and a deer will bleed all that is necessary when you take out his en-

Our Best Week's Work

trails. If you are still following another deer, stick him in the chest and leave him with his head lower than his body until you return.

If the entrails are not drawn soon after the deer is killed the carcass will puff up on account of the gases which the entrails generate; as flies at once deposit their eggs in a decaying carcass, which begin to hatch within twelve hours after being deposited, the carcass soon gets fly-blown and spoils.

To keep the carcass from being eaten by other animals cover it with brush or snow or put some article of clothing upon it, as this makes them suspect a trap. Another way is to blow up the bladder and hang it over the carcass.

If the deer is too large to pack back to camp, or you are too jolly lazy to try it, put a strong stick between the gambrel joints of his hind legs, and after bending down a good-sized, springy sapling, by climbing into it, make it fast to the stick in the gambrels. When the sapling springs back lean a long, forked stick against it, and with another forked stick lift the sapling as far as you can, at the same time pressing against the first stick. When you have lifted the deer as far as you can in this way put one of the sticks on the other side of the carcass. You are now ready to go back to camp and report progress.

If you do not care for the skin and only want the deer meat, cut off the head and neck, then cut off the fore quarters, and put them inside the carcass and fasten the ends together with twigs. You will find

that you can now easily drag the carcass over the ground by the hind legs.

As you stand in front of the camp fire in the evening and rub your legs with your hands, you will be sure to touch up many of the incidents which went with the killing. This generally sets the ball rolling, and before it is time to turn in, the others will have yarns to tell of good shots which they have made. I remember a story which my guide, Sumner, once told. He was a sure shot, and one evening when we were yarning it he said, in his modest way: "The best shooting I ever done was when I shot the four legs off a buck with a forty-four carbine, one of the seventy-three models, you know. I had a parson with me and he'll tell you it's the gospel truth. It happened this way. The parson and I had been out hunting all day long, and late in the afternoon he kind of intimated that I was working him for three dollars for guiding. If he hadn't been a parson I'd have told him to go to the devil and gone back to camp, but I says to myself, says I, 'This man doesn't know enough to break the Sabbath, and I'll git him tangled up in a cedar swamp, and when he's good and hungry and lets out the first cuss word, I'll tell him he's no better as a parson than I am as a guide.' As luck would have it, as I was coming along, you know, heading for a swamp near there, I saw a deer hiding behind a big fallen pine. The tree was about two feet off the ground and all you could see was the deer's four legs, so I crouches down to git at him fair.

"'What are you firing at?' says the parson, for he was watching the outfit and didn't know enough not to talk.

"'Partridges,' says I, after I had sniped off one of the deer's hind legs and was throwing another cartridge in the barrel.

"'Did you hit him?' says the parson, just as if he was everybody.

"'No,' says I, and when the deer came down after his first jump I sniped off the other hind leg, for I had gauged the jump all right. With his two hind legs broken he wasn't very swift, and when he landed agin I had a bead on his front legs and made another good shot.

"'Why doesn't the bird fly?' says the parson.

"'I've shot off his wings and he can't,' says I, and then off went the other front leg. Of course, I don't tell this to brag about it, but if I do say it, it was good shooting."

Then one of us asked, "What did the minister say when he saw it was a deer?"

"That's the funny part of it," Sumner answered, a little embarrassed, "for I'll be gosh-darned, when we gits up to the log there was no deer there. But the parson will tell you how I told him that the deer must have sprinted off on four stubs."

We asked Sumner how he knew it was a buck if only his legs showed, and Sumner, after looking at us as if we were crowding him, finally said, "I saw the horns when he jumped."

CHAPTER XI

SOME MOOSE THAT I KNOW ABOUT

It will only be a question of time before you will want a shot at a moose, as he is the largest of the deer family and often weighs fifteen hundred pounds.

A Love Call

I remember how a guide once enthused me into going with him into a moose country. "I was all alone up there," he said, "tramping through the woods after game, and one noon was cleaning some fish on the shore of a little pond when, the devil take it! I looked up and saw a small island covered with a lot of dead trees turn round and move off. That island, Mister, was a moose cooling off in the water."

In color the moose varies from blackish brown to black, and because of the length of his long, yellowish gray legs he stands higher than a horse. His hair is bristly and coarse, being longest on the neck and shoulders. In appearance he is an uncouth-looking

animal, owing to the size of his large, ugly, overhanging nose, his long, waving ears, his short neck, narrow head, long legs, and stumpy tail. The bulls have wide-spreading antlers, which are sometimes six feet from tip to tip, short manes on their necks and shoulders, and pouches, known as bells, hanging from their throats. Both sexes have under their throats tufts of coarse, bristling hair a foot or more in length.

These animals are only found deep in the Northern woods and seldom venture into treeless plains; wild forests, far away from tote roads and logging camps, being places where they thrive. In a general way they have the characteristics and habits of the deer, but without the same intelligence. Their favorite haunts are hard-wood ridges, and like deer they yard in winter, but even in deep snow their long legs carry them at a pace which will astonish one who tries to run them down on snowshoes. From spring until snow comes they stalk the woods like giants, and when alarmed travel at a swinging trot with the speed of a locomotive, through undergrowth and over fallen branches which make a crackling sound like falling trees, and as much noise as a side-wheel steamer.

They browse on twigs, but live for the most part on ground hemlocks, on the tops of young trees, and on the bark of larger ones; their favorite diet being the bark of poplars, white maple, and moose wood, which they strip off, as clean as if it had been done with a carpenter's shave, by running their teeth up the trunk. To reach the tops of saplings they rear up against them and ride them down, straddling

them with their long legs while they eat the young branches and leaves. The tender shoots of birch, hemlock, alder, willow, and maple are also favorite foods. They are also fond of ground mosses and lichens, which cover the roots and stumps in the swamps and lowlands, and eat more or less grass, but to get at these they are obliged to kneel because of their long legs.

When the cold weather comes they seek shelter in thickets deep in the woods, and here in their yards live on young poplars, maples, and birches. In the spring they leave their yards for the waterways, frequenting quiet, tree-bordered ponds and streams for their summer food of lily pads, lily roots, and other aquatic plants, as well as to get rid of flies which, during the summer months, are a great pest to them—generally staying in one locality as long as the food lasts. As they are bulky and heavy they often get mired, and at such times, as it is difficult for them to get out, they will often stand and watch you. Only when they see that you are coming too near will they start to leave, going slowly until they get a solid footing, when they break for the woods.

From September until the middle of December the bull moose is in prime condition, and tears through the woods, bellowing his challenge to all animals which roam the forests. In this mating season fierce fights are common between rival bulls, both combatants frequently falling with their antlers locked in a death struggle. The bull moose is now sometimes a savage animal to meet, and unless the hunter is

Getting a Shot After Dark

cool-headed and a good shot it is good judgment not to meddle with him. During the fall and early winter they shed their antlers, new ones growing each spring, but unlike the antlers of the deer, these come out from the side of the head instead of on the top, and by the first of October, when these horns are full grown, they are broad and flattened, hard and sharp.

The cow moose, like the doe deer, gives birth to her young in the spring, generally not later than June. At this time she gets into some forest or thicket bordering a pond or stream, where the calf feeds on the underbrush and the mother on the aquatic plants which border the water. Unlike the doe deer, the cow moose generally gives birth to but one calf at a time, although after the first birth she sometimes brings forth two. These are long-legged, ungainly, tawny-colored creatures, which stay with the mother until they are able to take care of themselves, or find mates. Like the doe, the cow has no antlers, but defends herself with her sharp hoofs, which she uses with the skill of a prize fighter, being able to trample to death the largest of bears.

Except in the rutting season moose are very wary and timid, their sense of smell being so acute that it is difficult to approach them, and although they are hunted the same as deer, there are ways of getting a shot at them which deer hunters do not have. One way is to imitate, through a cone-shaped horn made of birch bark, the call which a cow moose makes to attract a bull. This call is a series of low wails, like the mooing of a cow, which ends with a long, drawn-

out grunt, the bull answering it with several loud roars or grunts of satisfaction at the thought of finding a mate. As this calling is done at night the bull sometimes gives no warning of his approach until he is on the spot. Another way of calling a bull is to imitate a noise which he makes during the mating season, by snapping his jaws together several times in succession, called chopping. As this sound is like the sound of wood being chopped at a distance, old hunters imitate it by rapping on a partly hollow tree with the broad side of an axe, which, as it often makes a bull imagine another bull is in his territory, brings him to the spot. The common way of hunting a moose, however, is to follow his tracks, which generally can be distinctly seen. But remember that it is an old moose trick, when he knows he is being followed, to circle back to the leeward of his trail, and then, hidden from view, to lie down near enough the trail to hear or smell you as you go by. The result is that when you reach the place far ahead where he turned back he will be miles away, plunging along down wind at a race-horse pace.

Remember that as soon as a moose scents you he will run a short distance and then stop. Therefore, rush at once in the direction from which the noise comes, while the moose is running, and then creep along cautiously.

Remember when firing at a moose to take aim at some particular spot as a target, otherwise the sights will not be ranged and the bullet may fly wild.

As a moose often does not change his gait when

he is shot except for a second's pause, watch him closely as soon as you fire, otherwise you will not know whether you have hit him or not.

If a moose falls backward on his haunches you may be sure he is mortally wounded, as he differs in this respect from a deer, which falls forward when hit in a vital spot.

Shot with a Camera

CHAPTER XII

SOME GEESE AND DUCKS THAT FLEW AWAY

THERE is so much to write about geese and ducks that one is tempted to turn the throttle on too far. They both belong to the same family and are equally at home in the tropics and on the borders of the Arctic Ocean. Because their oiled feathers protect the down underneath, they can endure the most severe arctic temperature. During the summer they migrate to the north, where they raise their young, and in the winter go south. Being nocturnal in their habits they generally fly at night, and during these migrations, which are usually at the same time each year irrespective of weather, they spend weeks and sometimes months at favorite feeding grounds on the way, passing the day on the water far from the shore if disturbed, and visiting their feeding grounds only at night.

Seasoning

Geese are found throughout North America, and are divided into eleven varieties, the most common variety being the Canada goose. Its head and neck is black, with a triangular white patch on each cheek, these two patches generally meeting under the throat, although they are sometimes separated by a black line. The upper part of the body is black, the black fading into the white of the under part of the body. Their flight is swift, and commonly in the shape of a V or a triangle, although they sometimes spread out into a crescent with the rounded part forward, in muggy or foggy weather or when snow is falling often flying so low that they almost touch the reeds and grasses of the marshes. Their alertness and wariness are proverbial, and when feeding or resting they always have one of their number on watch. They are gregarious birds, and when flying, if they see other geese in the water generally lower their flight and join them after making one or two circles. For this reason they can often be called to decoys, especially when one or two birds are flying alone.

In the duck family there are thirty-nine well-known varieties, which are divided into fresh-water ducks, or those which feed on seeds, grasses and roots picked up from the bottom or margins of the rivers and ponds; diving or sea ducks, or those which feed on shell-fish, many of them diving for their food into water from fifteen to twenty feet deep, and the mergansers or fish ducks, or those which feed on small fish, which they get by swimming after them under water.

Fresh-Water or Non-Diving Ducks

Of fresh-water ducks five varieties are well known to gunners.

The mallard, which is the most common variety, is rarely found on salt water and is not a common bird in New England. In the northern interior they are shot from early October until the waters freeze over in November, and during the winter are found in large numbers in the south. In the autumn, winter and spring they resemble in color domestic ducks, which belong to the same family. Their heads and necks are brilliant green, sometimes showing golden and purple reflections, and below this green is a narrow ring of white. The back is brown, finely waved with grayish white, the breast glossy chestnut, and the under part of the body gray waved with narrow black lines. They rise from the water with a single spring, almost straight in the air, uttering loud quacks of alarm as they rise, and then fly upward at a sharp angle until they reach a height of thirty or forty feet. As their attention is readily attracted by imitating their cry of alarm, gunners use it in getting them to light near decoys.

The Black Duck

The black or mottled duck is similar to a mallard, but is different in color, being blackish brown, with each feather tipped with a lighter brown marking which gives it a mottled appearance. They are not common in the interior, but are the most common fresh-water duck of Canada, New Brunswick, Nova Scotia and the New England coast. They generally

breed north of the United States, although in mild winters they often remain throughout the season in northern New England, their nests being usually on the ground concealed in high grasses and rushes. Although they feed almost wholly in fresh water they by no means avoid the sea. In the New England States they often spend the day on the salt water, and feed during the night on the inland streams, swamps and marshes, where, especially when there is a moon, their cries are often heard. As many gunners believe that their sense of smell is particularly acute, they never attempt to approach them down wind.

The green-winged teal is found over the whole of North America, and next to the wood duck is the most beautiful of all our ducks. Although a water fowl, and a good diver when in danger, it is equally at home on land, its nest usually being not far from the water in high grass and sometimes on the top of a ridge. The head and neck of the male adult is reddish chestnut, with a broad band of metallic green on each side, running from the eye to the back of the neck, where the two meet in a tuft. The breast is a reddish cream color dotted with round or oval spots of jet black. The back of the neck and body have black lines upon a white ground, and the upper wings are black and green margined with white. The female is brownish, the feathers being generally margined with buff, the breast more or less spotted, and the sides of the breast whitish speckled with brown. They fly with astonishing speed and great steadiness, the flock often being of great size, and they fly so

closely bunched that they resemble a flock of black birds more than ducks. At such times if they become alarmed, they separate like an exploding bomb, darting in every direction at a speed that takes quick shooting to hit them. If, however, you can fire into the bunch the havoc will often bring down a dozen birds at a single shot.

The blue-winged teal, which is a little larger than the green-winged teal, is probably the most common of the smaller ducks of the United States and Canada. As they usually arrive in the latter part of August or early September they are often called summer teal. If the winter is mild they remain throughout the year in northern United States and Canada, where they are found on the flats sifting the mud for food. The top of the head of the male adult is black and the rest of the head a dark lead color, with a white crescent-shaped band edged with black which runs from the forehead to below the bill. The upper part of the body is dark brown and dull black, barred and streaked with buff, and the lower part a dull brown. The smaller wings and some of the larger shoulder feathers are sky blue, the secondary wings green, with a bar of white and then a bar of blue fringed with white The female, which is also known by its blue markings, is frequently without the brilliant green marking of the male, and sometimes has a white marking on the throat which runs up under the bill. They often breed in northern New England and on the prairies of the Central States, their nests being usually on the ground, and generally, but not always, near the

water, the mother lining the nest with down and covering the eggs with down and grass when she leaves it. They travel in large flocks, the speed with which they go and the closeness with which they huddle being well known to gunners; and when swimming they are often so close together that they nearly touch each other. They readily come to decoys, and can be attracted by a soft, lisping note which they sometimes make when flying. When alarmed they leave the water like mallards and black ducks, and then dart away in every direction, coming together later in a close bunch.

The wood duck, which is the most beautiful of all our ducks, is a bird of swamps and small inland waters, and one of the few species which make their nests in trees, the nests generally being in hollow trunks, although these birds sometimes take possession of holes made by large woodpeckers. They are perfectly at home in the woods, and fly among the tree tops at great speed. The head and the long, thick crest of the male adult are green and purple with brilliant metallic reflections. On the head a narrow line of white starts at the base of the bill, and passing over the eye runs along the crest, another line starting behind the eye, which also runs into the crest. The throat and upper neck is white, from which a white line goes up behind the eyes and another to the back of the neck. The lower neck and breast is a rich chestnut glossed with purple, and dotted in front with triangular spots of white. The back is purplish black with glossy reflections. On the side of the breast, just in front

of the wing, is a broad white bar, and behind it a bar of black. The bill is deep red, with a black spot near its base and a white spot on the side, and the eye is a bright carmine red. The female is generally gray or greenish gray, with markings in a general way like those of the male. When the young are hatched, if the nest is over the water, the young birds crawl to the edge of their nest and throw themselves into the water; otherwise the mother carries them to the water in her bill.

Deep-Water or Diving Ducks

Diving ducks, or those which get their food in deep water, are larger than the shoal-water ducks, and as their legs are set well back on the body they move with difficulty on land, although this position of the legs assists them in swimming and diving. During the day they generally stay where there are wide stretches of open water and at dusk go to their feeding grounds, where they sometimes feed well into the morning.

The canvas-back, the most common deep-water duck, is among the swiftest fliers of all ducks, and is found in great numbers on the Virginia and Carolina coasts, but rarely in New England. The top of the head of the male adult is black and the rest of the head and neck a reddish brown. The lower neck, forehead and upper breast are black, the back, lower breast, and under part of the body white, and the tail black, the female having those parts brown which in the male are reddish brown and black.

The red-head duck is found both on the Atlantic and Pacific coasts and in the interior. They are often mistaken for the canvas-backs, which they closely resemble except on the head and neck, which in the male adult is a bright, reddish chestnut often glossed with coppery reflections, and in the female brownish, with the forehead and the sides of the head almost white. They readily come to decoys and when about to alight crowd close together. When wounded they swim long distances under water, and on coming to the surface often show only such a small part of their bills that it is difficult to detect them.

The broad-bill or blue-bill duck, which receives its name from the pale, bluish lead color of its bill, is found throughout North America and as far south as Central America. The head, neck and breast of the adult male are black, the upper part of the body brownish, and the under part white. Along the New England coast, where they feed to a large extent on shell-fish, the flesh is not good eating, but farther south, where they live largely on vegetable food, they make a most excellent table dish.

The little black-head duck, which can readily be distinguished by its small size, is similar to the broad-bill duck, the two species at one time being classed together. They frequent the coast between New England and Florida, and are found in large numbers in the interior. They are swift fliers and expert divers, are adepts in skulking and hiding, and are as much at home in shoal water as in deep water,

often being found along the edges of marshes with fresh-water ducks.

The eider duck is found on both the Atlantic and Pacific coasts, and during the winter time frequents the New England coast in large numbers. The top of the head of the male adult of the common eider is a deep black, the upper part of the body, neck and breast white, and the under part of the body black, the female being a reddish brown color generally barred with black. They are deep-sea feeders, and live chiefly on small fish, which they often bring up from great depths. They are often found with coots, and when they rise from the water flap along on the surface for some distance in the same way. On account of the food which they eat the flesh is fishy and strong.

The ruddy duck is a small duck and one of the most unsuspicious of all ducks. It is found throughout North America, and as far south as northern South America. On the male adult the crown of the head and the back of the neck are black and the sides of the head white. The upper part of the body is greenish-brown flecked with a paler brown, and the under part silvery white, the female being much duller in color. When rising from the water they take a long time to get into their flight, but after they have started are strong fliers.

The American scoter or coot can be distinguished by its curiously swollen bill, which is more or less hollow on the sides and highly colored. It is an exceedingly tough bird and hard to kill, and because it feeds almost exclusively on small shell-fish the flesh

is not palatable, unless parboiled before being cooked. It is found on both coasts of North America, as well as on many of the inland lakes. On the adult male the plumage is deep black. The base of the bill is much enlarged, and of a bright orange color. On the female the plumage is a dark grayish brown, and the bill black. They reach New England from the north late in September, and often remain there during the winter if it is an open one, taking their departure again for the north in April and May.

The velvet-scoter or white-winged coot, is one of the most common of sea ducks. It has the same haunts as the American scoter, and on the New England coast is generally found with them and eider ducks. Like the American scoter it has the same black plumage, but differs in having a small white spot behind the eye, a strip of white on the wings, and a prominent knob on the top of the bill near its base. Like the American scoter they feed almost exclusively on small shell-fish.

Fish Ducks

These ducks are distinguished from the non-diving ducks by their narrow and rounded bills. They have handsome plumage, and their crests, which in some of the males are very large, are very striking. As they feed almost entirely on small fish which they get by diving, their flesh is too strongly flavored to be palatable. They are widely distributed over North America, and are among the last to go south in the autumn.

Merganser Ducks

The American merganser is found along both coasts of North America, and on many of the inland lakes, where they often remain during the entire winter, when the season is open. The head and upper neck of the male adult is greenish black with brilliant metallic reflections. The back is black, fading into ashy gray. The larger part of the wings, the under part of the body, and the breast are white, and in the female the head and neck are reddish brown.

The red-breasted merganser or sheldrake, is large and hardy, and does not go south until late in the autumn. They are swift of flight and when ready to alight do not stop their speed, but throw themselves breast down on to the water and slide for some distance. The head of the male adult is greenish black, with metallic reflections of violet and purple. Around the neck is a white collar, the lower neck and breast being a pale purplish brown. The back is grayish, waved with black and white, the under part of the body white, and the wings crossed with black bars. The female is reddish brown on the top of the head, and has a white patch on the wings.

The hooded merganser is distinguished by its hood-like head and is the most striking in appearance of all ducks. They do not confine themselves to the ocean but are found in all parts of North America, their nests often being in hollow trees, lined with leaves and down. They are swift fliers, expert swimmers and divers, and being unsuspicious birds readily come to decoys.

Stealing on to a Bunch of Ducks

Remember that knowing how to hold on geese and ducks, and when to pull the trigger is one of the most difficult kinds of bird shooting, and although blue-bills, black-heads, canvas-backs and red-heads are the swiftest fliers of all ducks, you will find that all geese and ducks fly fast enough to puzzle any but the most experienced sportsmen.

If you will notice where your shot strikes the water when you are shooting at geese and ducks flying low over a pond, you will learn what distance ahead to shoot.

Remember that old sportsmen are never afraid of holding too far ahead, but are always afraid that they will shoot behind the bird.

Remember that geese are the most deceptive birds for an inexperienced gunner to hit, as they are so large that one is apt not to take a close aim. Their flight, too, is much swifter than one imagines.

The Best Time for Geese and Ducks

The best time to shoot geese and ducks is in October and November when the moon is up, or at daybreak or dusk when a strong wind is blowing.

The best place to find them is along the edges of marshes, or in coves which are sheltered by woods.

Always approach them, if possible, against the wind, and creep up so slowly and quietly that they cannot hear or see you.

Remember that sand and gravel are as necessary to them as their food, and that they go to some sand bar, which is often in some exposed place, each morn-

ing and late each afternoon. If, therefore, you find where they gravel, go there before they arrive and lie in wait for them.

Remember that they generally go to their feeding ground about daybreak; that about ten o'clock they go to some open water to wash and sleep; that they again go to their feeding ground about four o'clock in the afternoon and they return to the open water about dusk.

Remember that in flying to and from their feeding and gravelling grounds they always go by the same route and at practically the same time each day. It is therefore better to spend your time finding these favorite places, and learning their routes of flight, than to wait for them at blinds and decoys.

Remember that when they are feeding, gravelling, or asleep with their heads under their wings there is always a sentinel on watch, and that in sneaking on to a gaggle of geese the old gander which talks bass is the one which gives you away.

Remember that if you get a goose cornered in a cove where it is difficult for him to fly he will dive like a duck. Do not, therefore, try to get too close to him.

Remember that a duck when wounded often dives under a root in order to escape and is drowned.

Remember that most water birds have the power of so sinking their bodies that only their bills are out of water, and that when pursued it is surprising how fast they can swim in this way.

Remember that you can always tell when geese are about to light by the way they set their wings.

Remember that there is a knack in creeping on all fours on to geese or ducks; that most hunters, and many of them old ones at that, are so curious to know whether they have alarmed them or not that

Gravelling

they cannot resist raising their heads as they crawl along, which is almost certain to start them off.

In getting on to geese and ducks when in a boat do not follow them if they begin to swim away, but let them see that they can escape, and when they stop swimming get after them quickly, slowing down when they begin to swim off again.

Remember that blue-winged teals, when wounded, swim ashore and hide in the woods. Remember, too, that they are very keen in their scent and cannot be approached from the windward.

Firing Ahead

As most geese and ducks will fly when they see a gunner, keep out of sight as much as possible. With an incoming bird, however, do not do this if you will be obliged to twist around and shoot after the bird has passed, for you will then be almost sure of missing him.

When shooting at a quartering bird flying overhead, shoot before the bird has passed or you will shoot behind him. If he is flying with the wind he will be going at such speed that you cannot estimate closely how far ahead to shoot. If you miss him hold farther ahead the next time.

To keep geese and ducks from spoiling pluck their feathers, draw the entrails, and then stuff them with charcoal and pepper and hang them up.

CHAPTER XIII

SOME PARTRIDGES THAT TAUGHT ME A THING OR TWO

ALTHOUGH in the Bible story the quail sent as meat to the famished is properly called a quail, there is no such bird in this country, as the American quail, so called, according to the classification of ornithologists, is a partridge. By the same classification these "birdologists" also say that birch and spruce partridges are grouse, the only partridge in this country, except those popularly known as American quail, being found along the Pacific coast, and in western Texas, New Mexico, southern Arizona, and on the table lands of Mexico. Grouse, therefore, and not partridges, are what we find in the woods when we speak of partridges, the American species of the grouse family being the ruffed grouse or birch partridge, the dusky grouse, the Canada grouse or the spruce

Guarding the Nest

partridge, the pinnated grouse or prairie chicken, the sharp-tailed grouse, the cock of the plains, and the ptarmigan.

The Ruffed Grouse or Birch Partridge

These birds are known in New England as partridges and in some of the middle and southern states as pheasants. They are yellowish brown and gray, barred with black on the head, neck, and upper part of the back and wings. Their heads are crested, with ruffs on the sides of the neck and rudimentary air sacs on the lower part, which are covered with soft, glossy feathers; on the hen grouse these ruffs being brownish black with a slight green gloss, and on the male grouse being larger, blacker, and glossed with a vivid bottle green; on some of the larger birds the ruff being of unusual size, and of a deep coppery red color with violet, green, and gold. The tail is long, broad, rounded, and fan shaped, and the upper tail feathers gray, mottled, and barred with black.

As a rule they are found in small flocks, but in sections hunted over only two are found together. They delight in upland and mountain forests, being particularly fond of the sloping banks on the sides of brooks and small streams. They are also found in snarls of thickets, in dense second growth, in heavy woods, in dark ravines filled with tall trees, on old logging roads, around abandoned lumbermen's camps, and on deserted farms where there are apple trees. As winter approaches they are generally found on the sunny side of hard-wood ridges where there are beech

trees, and after winter has fairly set in they go into the lowlands where there are heavily timbered swamps or thick growths of saplings, from here foraging the surrounding country and flying back to their thicker covert at night, or when alarmed. At this time they roost in the trees, but when a heavy fall of snow comes they never hesitate to plunge into a snowdrift, where they find the warmest of quarters. From spring until fall they feed on acorns, beech nuts, different kinds of berries, wild grapes, buttercups, clover, grasshoppers, crickets, and the smaller insects, and during the winter live on the foliage of evergreens, the buds of birches and other trees, and sometimes on the leaves of alders.

The hen grouse is a model mother and covers her young like a domestic fowl until they are strong enough to roost among the thick leaves upon the long, low branches of hard-wood trees. Like young turkeys, young grouse cannot stand a wetting, and at the first sign of rain the mother gets them under her wings, never heeding a deluge herself, if they are dry. If there are signs of approaching danger she calls them to her in a low voice, and from there they scatter and hide between the roots of trees, under leaves, in curls of birch bark, or squat on yellow chips and leaves, where they lie so flat that it is almost impossible to see their yellow bodies, and only when the mother again calls do they come from their hiding places. Up to a certain age they are the most delicate of all game birds, but when they have run the gauntlet of infantile diseases they become strong

and rugged. When half-grown they begin to roost in trees, and from this time generally tree when flushed. If they do not fly they stretch themselves to their full height and remain perfectly motionless, and when in this position only an experienced eye is able to detect them, as they closely resemble decayed and broken stubs. In searching for a treed bird, follow with your eye the trunk of the tree to the top, as the probability is that the bird will be perched near the trunk. If you do not find him, then look along each branch to its tip. In locating him have your gun ready for quick action, for the bird seems to know by instinct the instant he is discovered and at once takes wing.

A peculiar habit of the male grouse is the drumming which he does with his wings by beating the air with them as a challenge to both sexes that he is open to engagements of love or war, or both. When he is ready to drum he gets upon some favorite log, a stump or a mossy stone, and sometimes does it on level ground, returning every day to this drumming place and often for several seasons. When ready to drum he first walks up and down his drumming log, peeping this way and that to make sure that it is safe to make a racket. While doing this his feathers are ruffed up, with wings half trailing and tail half spread. Then he puffs himself up, throws back his head, lifts his tail in the air, and spreads it out in a semicircle. As he struts about like a turkey gobbler you have in his clearly cut profile a picture for an artist in the graceful pose of his body and the perfect

poise of his head. Next he thrusts his head forward to the full length of his neck, closes his tail, and lowers it to a level with his back. Then the wing beats begin, at first slow and measured, soon increasing in rapidity until the separate beats are lost in a sound like distant thunder or the muffled roll of a drum. At this time he is oblivious of everything but his own passion, and because of this it is easy to get close to him if one moves cautiously and only stirs while the drumming is being done, for the instant it ceases he seems to realize that he has been taking chances, and if the slightest noise is then made no more drumming will be heard.

By nature the ruffed grouse is not a wily bird, but in sections much shot over he becomes as cunning as a fox and has many inherited family tricks to try if the occasion requires it. If he hears you coming and does not think it safe to fly he quietly hides and lets you pass; but if he flies, although he can do it silently, he rises with a whir in order to unnerve you and to give other grouse an opportunity of sneaking off or escaping notice by squatting. Another well-known trick is to fly behind the nearest tree when you come upon him suddenly, and then to keep the tree between you and him until a safe cover is reached. Neither does he forget that you will watch where he lights, and as soon as his feet touch the ground he darts to one side, a trick, however, which he seldom plays if he has never been hunted, but gives a twitter, and remains motionless. If you suddenly come upon a mother grouse with her young

she will put up the most desperate sort of a bluff, and feigning lameness, will throw herself in your path, hoping to draw your attention from her hiding chickens. Often, however, a grouse will show such a confiding trust that it astonishes the novice, but once the bird realizes his mistake and turns on the full voltage, he rushes for thick covert in a flash, and unless you have learned the trick of dropping on your knee and getting a glimpse of him from under the branches he is out of sight.

As the flight of a grouse is generally a headlong dash, with a sudden, thundering whir of his wings, it never fails to have its effect on even a veteran's heart, and plays havoc with the nerves of a novice. There is no hesitancy about it, the bird getting to his top speed within a few yards of where he started and plunging into the thickest of cover like a cannon ball. It is this which makes the shooting of these birds a difficult thing to do, for the sudden and unexpected rise makes a man instinctively want to swing his gun three ways at once. To be successful one must shoot quickly and accurately; must take in at a glance conditions which vary with every bird that flushes, and must let the second barrel bang as soon as the finger can be shifted to the other trigger, the majority of misses being because the roaring rise of the bird, which is always when and where it is not expected, shakes any but service-steadied nerves, and makes the man who pulls the trigger fire before he has taken proper aim. Another trouble is that, when the bird is flying straight away, he is rising and rushing away

at the same time, and, because his broad tail with its conspicuous black band catches the eye, the gun is held on the tail, which means a couple of inches too low. With quartering birds the tail also helps to make a miss, as it so increases the apparent length of the bird that the gunner only covers the after part of the body when he should be aiming at his head, the difference of these few inches putting the bird outside the dead zone of all but a few scattering shot.

In firing, if you will hold well forward, not one in a hundred birds will be missed by overleading, for even when the gun is inches too far ahead a single diverging shot will be fatal because, in touching any part of the bird, it will be the head, the neck, the region of the heart, or a wing, which are vital spots.

Suggestions About Shooting Ruffed Grouse

Never balk when a bird rises close beside you in some thick covert. Shoot anyway. Get into the habit of shooting through all sorts of stuff if you can see any part of the bird. It's dollars to doughnuts that the covert which appears a hopeless, tangled mass is only soft leaves and slender twigs, which your shot will plough through. Make up your mind that where the bird can go your shot can follow. Pull even if the bird vanishes just as you fire, and if you have aimed ahead of where the mark disappeared, the chances are still good that you will get him.

If the bird is flushed from the ground he will probably fly straight away, and if a thicket is close at hand he will only fly a short distance. If he flies low the chances are that he will light on the ground, but if he rises when he disappears it generally means that he is flying to a tree.

If the bird is coming head on wait until he has passed you before you fire, for if you fire while he is coming toward you the shot will go against his thick feathers, and are apt to glance off. By waiting until he has passed, the shot will get in under the feathers. If you are obliged to fire at an incoming bird, aim at his head.

The best months for shooting ruffed grouse are October and November, as the leaves are then off the trees and the birds are in the open on the sunny side of the ridges. The meat, too, at this time has its best flavor.

The best time of day for shooting them is the early morning or after a storm, as they then come out of the woods to sun themselves and to feed. Never go after them if there is much wind blowing, as they are then in the thick growths.

The best places to look for them are near berry bushes or on hard-wood ridges where there are beechnuts. If it is getting dusk look for their roosting places.

Do not be surprised to find them anywhere during the full of the moon of November, as the moon seems to give them a longing to drift about—it does not much matter where—and they are sometimes found

in cities, and sometimes light on coasting vessels at sea.

Canada grouse are found throughout Canada, and the northern United States from the Atlantic Ocean to the Rocky Mountains. They differ from the ruffed grouse in having smaller crests on their heads, smaller air sacs on their necks, and shorter tails which are square at the ends, in color being much darker, and in size somewhat smaller.

Between the two sexes there is no appreciable difference in size, although the cock has a much brighter plumage than the hen. Their haunts are in growths of spruce and fir and in swamps of tamarack. They are also found on old logging roads, and in abandoned lumbermen's camps. They are gentle and unsuspicious, and when you come upon one in a tote road he does little more than step aside to let you pass. If one is roosting on the limb of a tree, all you have to do is to put a slipnoose on the end of a pole, and with stupid curiosity he will let you drop the noose over his head.

Because of their stupidity there is little sport in shooting them, but do not believe the man who tells you that the meat is not good eating, as this is only true during the winter and spring while they are living on spruce twigs.

Although the meat is dark, and not so delicately flavored as that of the birch partridge, a young spruce partridge is almost as good eating during the summer and fall as a birch partridge.

As skill in wing shooting is not born in one, and

as the knack cannot be learned from books, the only way to become a good wing shot is to keep at it until it becomes a second nature. The difficult thing about it is to know how far ahead to hold and when to pull the trigger. This requires a cool head, a quick eye and the rapid handling of your gun, the whole secret being in making the trigger-finger work with the eye without taking time for mental calculations.

Firing at a Bunch

When you fire at a bunch of birds aim at some particular one. If you expect to get more than one of the bunch aim for one near the head of the flight. If you only expect to bring down one fire into the middle of the bunch, for you may make a bad shot and yet get a bird.

If your bird is rising don't bring your gun above him and then down, but fire as your gun comes up. In other words don't make a drop shot as it is called, for with the bird rising and the gun falling the chances are about even for a miss.

Remember that when large birds rise to fly they start against the wind, and that only when they get under headway do they take the direction they wish to go. Catch them, therefore, just as they are steadying themselves in the air for the turn, as the question of velocity has not now to be considered in taking aim.

The fault which all beginners have to overcome is stopping the swing of the gun with the left hand

when the right hand pulls the trigger. This, of course, generally makes a miss, for before the shot has started on its journey, although it is but the fraction of a second, the bird has had time to get beyond the line of fire. Both hands, therefore, must be taught to act independently, the same as when playing a piano.

Another fault of the novice is in not being cool enough to keep the quarry covered until it is both in the right position and at the right distance for the shot to do its best work.

If your bird is about to alight fire a little under him, and at the same time a little ahead of him.

If your bird is flying straight away fire a little over him, for unless he is about to alight, and is flying downward, you may be sure he is rising. If he is above you hold higher than if he were on a level with your eye, and if he is skimming along the ground hold a little lower.

If your bird is flying diagonally toward you wait until he gets by you on account of the feathers. If, however, he would be out of range when he gets by, fire a little above him, unless he is dropping, and from one to two feet ahead according to his speed. The exact distance, of course, you can only learn by experience. If the bird is flying diagonally from you fire under him, unless he is dropping, so that the shot will meet him. In both cases follow the bird with your eye, and your gun will, unconsciously, keep on the line of fire.

Although quartering birds should be the easiest

to get, as they give the largest mark, most beginners miss them because they either do not hold far enough ahead or stop the swing of the gun when they pull the trigger.

Remember that if you are right-handed, and the bird is flying to your left you will have to make more

Cock Partridge

of an effort in swinging your gun beyond him than if he were on your right. The reverse, of course, is true if you are left-handed.

Remember that there are three golden rules for wing shooting. The first is to have confidence in yourself or, in other words, to make up your mind that you will get the first bird that starts; the second is to let the bird have it when he starts, if there is a ghost of a chance of hitting him; and the third is to keep cool and give the bird time to get into his regular flight. This will give your nerves time to get settled and your mind time to get both a clear idea of the

distance the bird is away, and the velocity with which he is flying.

Bird Terms to Know

When a number of herons or bitterns are together it is called a sege. A number of swans together is called a company. Cranes or curlews together are called a herd. Three or more ducks together are known as a flock or bunch, sheldrakes as a depping, teal as a spring, coots as a covert, mallard ducks as a sord or suite, geese as a gaggle, quail as a bevy, plover as a congregation, snipe as a walk, peep as a flock, partridges as a brace, and woodcock as a fall.

CHAPTER XIV

SOME OF THE PLEASURES OF TRAPPING

If you are to take your vacation between November and April it will pay you to take along a few traps, as it is always interesting to have something to visit while you are wandering through the woods. You will find, too, that there is a peculiar fascination about trapping which gives to this sport a charm distinctive to itself, as you will always be wondering what may be in the trap.

A Mink Trap

Successful trapping means brains against cunning, and only a small part of it is being able to set a trap cleverly. To win in the game it is not enough to know from books the characteristics of the animal you hope to get, but you must have a practical knowledge of his daily habits. If you are after aquatic animals you must know the swamps, streams and ponds where impressions of their feet and bodies will be left

along the banks. You must also know where they leave and enter the water, and where their slides or play-grounds are. If you are after land animals look for their droppings, the signs of recent meals and their runways through the grasses and bushes. When you come upon one of these places examine it carefully, and you will probably find a few hairs which will tell you, if the footprints have not already done so, what kind of an animal has been there. Look closely at a dead leaf which has been moved and see if it is still damp on the under side or at a crushed blade of grass and decide how recently it was broken. Examine the footprint and make up your mind how fresh the tiny bits of dirt are which have been disturbed. If you satisfy yourself that the animal is accustomed to pass that way, set your trap so that he will be forced to step on the pan.

Trapping in General

Every one knows that an animal, caught in a trap, will gnaw his foot off if the jaws of the trap break the bone when it snaps together, and if the bone is not broken, that he will gnaw the flesh off so that he can pull it out, neither of these things being painful for him to do as the leg becomes numb by being pinched between the jaws. To prevent an animal doing this a spring pole, so called, is used which is made by bending a sapling over and holding it down with a pronged stake which is driven into the ground, the chain of the trap being made fast to the sapling, so that when the animal in his struggle releases the sapling from

the stake, he is held head downward when it springs up. The one thing to be sure of is to have the sapling large enough to lift the animal. If there is no sapling where you set the trap dig a hole in the ground and put one there. Another way is to attach to the chain a drag or clog of about the same weight as the animal, so that he can drag it along but not run with it. Be careful, however, not to have the clog so heavy that he cannot move it or he will gnaw his foot off. Be sure also to fasten the chain near the end of the clog and never in the centre, so that the clog will not get caught in the undergrowth. To prevent the chain slipping off the clog, fasten it at the thicker end, and then drive a wedge in or put the chain in a groove cut in the clog. To prevent an aquatic animal gnawing his foot off, trappers take advantage of its habit of diving into the water when caught, by setting the trap either on the edge of the water or in it, and having the ring on the chain over a stout wire, one end of which is fastened to the shore, and the other end to a large stone which is thrown into deep water. By this contrivance the animal when he plunges into the water and the ring slides down the wire to the stone, is unable to get to the surface for air, and drowns. If you have no wire cut a long limb off a tree, trim off the branches except a few stubs near the end, drive it into the ground in deep water, and make the other end fast to the shore, or, in other words, use what trappers call a sliding pole.

In setting a trap remember that the secret is to conceal it in such a way that the animal cannot tell

Changing Camp

where it is, and unconsciously steps on the pan. As an animal in prowling about follows a well-defined path, and only leaves it to explore the woods and then returns to it again, one way is to put the trap between two ridges which are close together on the sides of a natural pathway. Another way is to put two logs, V-shaped, along a well beaten path, hiding the trap in the narrow opening. Another way is to sink the trap in the path, and to place some sticks across the path in such a way that the animal in stepping over them will step on to the pan, as an animal when going along a trail never steps on sticks or stones in the path if he can avoid it. In setting a trap keep in mind that wild animals are suspicious, and that after a trap is set everything must be left as found.

Unless you are to set your trap in water wash it before you set it with woodash-lye or soapsuds, and then smoke it by burning bird feathers or dried grass under it, as most animals will smell the iron unless it has a woody or animal smell. After you have smoked it only handle it with gloves on, and never touch anything where you set your traps without them on, otherwise your hands will leave enough scent for the animal to know that you have been there. Do as little walking about as possible when setting a trap, and don't expectorate, even if you do not use tobacco. If you are to set the trap in the water, or on the edge of the water, go to the place in a canoe or wade along the shore. Keep in the water while setting it, and when you go back sprinkle your tracks on the shore with a wet hemlock bough.

Remember that wild animals live on what they capture and therefore look with suspicion upon meat or dead animals. Remember, too, that bait is a decoy, and is not put there for food, but to tempt the animal to investigate it. When you use bait never put it on the trap as an amateur trapper is apt to do, but where the animal in examining it will step on the pan. One way is to put the bait under a log with the trap so arranged that when the animal paws the bait out he touches the pan.

Another way is to put some bait in a rotten log, and after allowing the animal to paw it out, then to conceal the trap there after putting in fresh bait. To get the animal to go to the place, drag a piece of bloody meat or the entrails of some animal through the woods for a trail.

Another way to bait a trap is to lay a bird or a rabbit under a tree which has recently fallen over, and to hide your traps near the bait. Another way is to fasten the bait to a stick over the trap so that when the animal reaches up for it he puts his foot on the pan.

In using these or similar tricks of woodcraft remember that the simpler the methods the more chances there are of success.

The Bait to Use

Bait for carnivorous or flesh-eating animals should be meat in some form, and for omnivorous animals, or those which eat everything indiscriminately, any kind of food, a good bait for any animal being fried

meat smeared with honey or smoked meat, as it has a strong smell. Often in place of bait a trapper collects what an animal has left after it has finished a meal, especially the feathers, and puts these over the trap. Another trick is to smear the trap with blood, and then bury the trap after the blood has dried on it, as the smell of blood makes the animal think that some other animal has buried food there, and he paws into the trap. When, however, you set your trap on the runway of an animal, or where he goes to drink, or at his slide, or if you find a favorite feeding place where there are plenty of flags, grasses, succulent water plants, berries, or nuts, no bait is needed.

To attract animals which might pass and repass near a trap without going to it, the bait is often smeared with a scent. One commonly used is fish oil. This is made by cutting a fish, which is rich in oils, as a trout or an eel, into small pieces and putting these into a corked bottle. These, when exposed to the sun, give off a rancid oil which has a very odorous smell. Another good scent is made by putting mud worms into earth saturated with milk, and after the worms have become bloated with the milk, putting them into a corked bottle in the sun until they have decomposed. Other scents are assafœtida, a foul smelling vegetable product from Persia and the East Indies; castoreum, a secretion obtained from the beaver, which old trappers say "will make a beaver squeal with delight when it smells it"; and musk, a secretion obtained from the otter, muskrat, and

other animals, the musk of the female muskrat being largely used in the capture of that animal, and that of the otter for those animals. Other scents are oil of skunk; anise, a vegetable product which can be obtained at any drug store; sweet fennel, a plant cultivated in all parts of the United States; and cummin which is very similar to fennel. When using any of these scents be sure to smear them over the bait with a feather.

Often when trappers go their rounds they put a scent on the bottom of their moccasins and in this way make trails to their traps, or they drag along a piece of bloody meat, or the entrails of some animal. But better than any trail is to set several traps where you have killed some large animal, and then drag the entrails through the woods in different directions, as many animals are sure to go there sooner or later for a feast.

Trapping for Bear

The American black bear, which is the common species found in northern United States and Canada, feeds on roots, berries, beech nuts, acorns, flesh and fish, and is particularly fond of honey and molasses. Through the winter months they sleep in dens, caves, or hollow trees, and in February and March the she bear gives birth, generally, to two cubs which remain in the den until they are large enough to follow the dam, when they ramble about with her until the following spring and then forage for themselves.

If there is a bear in the vicinity of your camp set

a deadfall for him. An easy way of making one is to prop up a heavy log over one lying on the ground lengthwise with it, the under log being kept from rolling by driving down stakes on each side of it, and the upper log held in position by two sticks placed so obliquely that if a bear rubs against either of them they both give way, and the falling log breaks the bear's back.

To make the upper log or deadfall drop squarely on the bear, four long stakes are driven into the ground, close to the logs, the ends of each pair of stakes being bound with a withe above the upper log to prevent the stakes spreading. Timber is then piled on the deadfall just outside the upright stakes, and brush piled up against the timber on three sides, some trappers roofing the trap over to prevent the bear crawling over the brush and getting at the bait without going between the props. The bait is now put on the ground in such a way that the bear in getting at it has to squeeze between the props.

It often happens, however, with this kind of a deadfall that the bear knocks out one of the props before he gets fairly under the log, and thus escapes. For this reason a stick three feet long, called a spindle, is used. One end of this stick has the bait on it and the other end is hewed flat, and put under a single prop which holds up the deadfall, this prop being put in the brush where the bear cannot disturb it. As the end of the spindle which has the bait on it is now in the centre of the log enclosure, the bear has to get

well under the deadfall before he can pull at the bait which pulls the prop from under the log. Similar deadfalls but smaller ones are made for the other fur bearing animals.

Another kind of deadfall is made by driving into the ground inside the log enclosure two pegs with forked ends pointing downward and toward the opening. Under these forks a short stick is put, which is held in position by an upright stick three feet long, having square notches at the two ends, the lower notch holding up the small cross-piece. In the upper notch the flattened end of another stick is put, one end of this stick being held in position by the walls of the log enclosure and the other end projecting a few inches beyond the upright stick. Under this horizontal stick a long stick of timber is put, the outer end of this timber resting on a forked stick driven into the ground near the bed log, this long stick holding up the deadfall log. By this contrivance the deadfall log is held up on the outer end of the projecting timber which the smaller horizontal stick holds down, which in turn is held in position by the perpendicular stick with the two notches in it, this in turn being held in position by the pegs. By this series of connecting triggers, if the notched stick is pulled out of position, everything gives way. The bait, therefore, is fastened to the lower end of this upright stick, and the bear, being under the deadfall when he pulls it, releases it, and the deadfall drops on him. In making these deadfalls many trappers drive spikes into both the deadfall and the bed log, so that the bear is pinned

and cannot get away if the deadfall does not break his back.

The advantage of using a deadfall instead of a steel trap for bear as well as other animals, is that it generally kills the animal when it is sprung, and if

A Bear Trap

you do not visit the trap for several days you do not have it on your mind that some animal may be starving or freezing to death because of your negligence or laziness.

In constructing a deadfall only old material should be used. There should be no new axe work in the vicinity, and the older the material, consistent with strength, the better.

In setting a steel trap for a bear put it where one log has fallen over another, so that they make a V-

shaped pen, putting the bait where the two logs come together, and the trap at the other end. To get the bear to step on to the trap drive two sticks into the ground about eight inches from the trap, and slanting so that they cross each other about a foot above the ground. This forces him to step over the sticks where they cross and on to the pan. Under the pan put a small piece of wood to prevent smaller animals springing the trap, but not a piece strong enough to support the weight of a bear.

In setting a steel trap for a bear use a heavy clog and a short chain, as this will prevent him, when caught, trying to break it against trees, logs, and stones.

In baiting a deadfall or a steel trap for a bear, use the entrails of some animal, burnt or putrid meat, burnt fish, honey, or molasses smeared on fresh fish or burnt honeycomb—burning the meat, fish, or honeycomb on stones heated near the trap.

In looking for bear signs remember that a bear leaves deep claw marks on the mouldy bark of fallen trees.

Remember that a bear will pay no attention to any noise you may make if he is stalking game.

Remember that a bear will not hesitate to risk his life if a feast is in sight, and any odd arrangement of timbers does not make him suspicious when a tempting bait is discovered.

Remember that when you meet a bear there are always two surprises. He has one and you the other.

Minks which belong to the weasel family are ramblers except in the breeding season, which begins the last of April. They live in holes along the banks of streams, and feed on fish, frogs, snakes, birds, and mice, being particularly fond of muskrats and trout. Sometimes, too, they are able to pounce upon a snipe or a duck. They are always in search of something to eat, and in going along the bank of a stream peep into every nook and corner, their voracity being so much greater than their cunning that they will often go headlong into a trap. In their wanderings they not only have well-defined runways over which they travel, but nest in the same places, these nests being either under a root or in a hollow log, which are noticeable by the droppings.

Trapping for Mink

For a mink trap all you need is a two and one-half inch auger and some nails. Bore a hole four inches deep in the side of a log near a stream where there are mink tracks, or in the root of some tree, or in an old stump. Then drive three wire nails, with the heads filed off, into the sides of the hole, until they stick out about half an inch, tapping them enough to make them project inward. Throw a little mud or sand into the hole, and some fish scented with fish oil, and the mink will do the rest, as he can get his head past the nails but cannot get it back. Don't make the hole on the top of your log, root, or stump, as it will fill with water when it rains. If you use a steel trap and make a land set cover it with leaves, rotten

wood, or moss and then spread twigs around it. But be sure and use a spring pole, as blood relationship does not count when a member of the weasel family is in a trap, and it is one of the characteristics of this family to follow each other, and steal each other's prey.

If you set your trap in water put it on a root or a branch of a tree just under the water, with the bait on a stick out of the water, having the chain attached to a wire or a sliding pole, or the trap balanced on the root with a weight attached to the chain, so that when it falls off the root it will pull the mink into deep water and drown him, otherwise he will gnaw his leg off.

Another way to catch the wily mink is to build a stone house two feet long, six inches wide and a foot high in the shallow water of a fast-running stream, having the long side of the house parallel with the stream, and the upper end open. Inside on a stone just above the water put the bait, and then sink the trap just in front of the house, after putting the chain through the wall and fastening it to a piece of wood. On the top of the walls put a heavy stone for the roof so that when the mink gets caught and pulls on the chain the walls give way and the stone in falling kills him.

After everything is ready pour water over the house to take away all human scent, and then drop a decoy scent on the roof stone. If Mr. Mink passes that way and is hungry you are sure to get him.

Look for signs of mink in swamps or on water courses where there is a tangle of dead-wood or logs.

A good place to set a trap is where a sod overhanging the bank of a stream has curled down, leaving a space between it and the bank. Such places mink use as runways in going up and down the banks.

An old hollow log is also a good place for a trap. Don't use any bait as a mink likes to kill his own game, but drop some scent on the top of the log, and the mink will hunt around for the prey.

After a light fall of snow find the old logs, limbs of trees, and old dams where mink cross the streams, and set a trap in the centre of one of these crossing places.

In the winter time set your trap on the top of a large log so that it will be above the snow, first building a shack of splits, after cutting slashes in the log to hold the ends of the splits in position. Then put the bait at the back of the shack and the trap at the entrance.

Remember that if you trap a mink without using a spring pole or a sliding pole, other mink, or a marten, or a fisher, will be apt to rob the trap.

For bait use deer meat, muskrat meat or fish, fish being the best, as it gives more scent. If you use scent the musk of the muskrat is the best.

Many trappers cover their traps even when set in water, as the keen eyes of a mink are apt to notice a trap if it is not out of sight.

Food of Marten

The marten, which also belongs to the weasel family, differs but little from the mink, except that the feet are larger. As they are shy animals their haunts are in thick, dark woods where they live in the tops of hollow trees, often taking the nests of squirrels and birds for their homes, occasionally making their homes in holes in the ground. They are more active climbers than the gray squirrel, but not as swift as the red squirrel, and generally roam the forests at night, although they are frequently seen during the day. They feed on rabbits, birds, squirrels, mice, and other small animals, and are especially fond of beech nuts and honey.

In trapping for them set your trap on their runways and use a spring pole, or make a shack on a log the same as for mink, or a deadfall similar to one used for a bear, but smaller in size. In baiting the trap use deer meat, muskrat meat or fish.

Trapping for Fishers

Fishers, which are better known as black cats, also belong to the weasel family, and although they resemble the marten, are much larger, the head being more pointed, the ears more rounded, and the neck, legs and feet stouter.

They do not live so exclusively in deep woods as the marten and often make their homes along the banks of streams, prowling about at night in search of food, especially in swampy places. They feed on rabbits, squirrels, grouse, mice, and small birds, and sometimes in the day time watch for

fish from a log over a stream where, with the head well over, they are ready for a plunge, as they are expert swimmers. Meat, however, is their favorite diet. Their breeding season is in March and April, the young being hidden from the males, high up in hollow trees, until they are large enough to take care of themselves.

When trapping for them take a deer-skin bag about the size of a mitten, and after punching it full of holes with a nail, put in it a mixture composed of the oil of anise, assafœtida, the musk of a muskrat, and fish oil and drag it along your line of traps. In setting your traps place them in hollow logs and cover them with powdered rotten wood, or make shacks the same as for marten. For bait use deer meat, muskrat meat, or fish.

Trapping for Otter

Otter being aquatic animals live either in nests burrowed in the banks of streams or in hollow logs or in crevices between rocks and stones, these nests being lined with dry leaves, grasses, and small sticks. They are about the size of the domestic cat, and in appearance are like the mink but larger, having the same color of fur, and practically the same habits. Like the mink, they are great ramblers, travelling over hills and through swamps from one stream or pond to the nearest point of another, several generally going together. In these rambles they are often gone from a week to ten days at a time, and the trapper who knows their habits patiently waits for their re-

turn from these circuits if he gets nothing in his traps. As the legs of the otter are on the sides of the body, it gives them an awkward and waddling appearance when travelling on land, their tracks being easily distinguished by the wide spread of their feet and by the impressions which the soles of their feet make on the ground, known as the seal. They are excellent swimmers, and are able to remain for a long time under water. They live almost entirely on fish, sometimes destroying them in large numbers for the mere pleasure of killing them, and as they are especially fond of speckled trout they are often found on clear and rapidly flowing streams. One of their peculiarities is their practice of sliding down wet and muddy banks. These places, which are known as their play-grounds, are found on all the streams and ponds which they haunt. In choosing a play-ground they select a bank which has a steep pitch into deep water, with shallow water close by, where they can easily get ashore, and a gentle slope to the top of the slide. When attacked they are plucky fighters, biting with all the energy they are capable of and never yielding as long as there is life in their bodies. As the bite is a severe one be cautious when handling one alive.

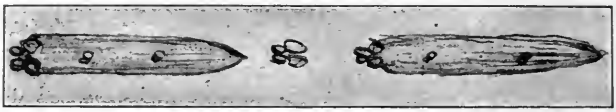
As the otter is keen-scented and very shy he is one of the hardest animals to trap. Use a No. 3, double spring trap, and when setting it in water put it where the otter comes out of the water to go to his slide. Have it about four inches under water, and, on account of the wide spread of an otter's feet

put it a little to one side of where his body drags along in getting out of the water. Do not, however, ever set a trap near a slide if the tracks show that they come out of the water at different places. Remember that as soon as the fore feet of an otter strike the shore his hind feet sink to the bottom, and he walks out. Therefore, set it where his hind feet will strike it. When setting it drive a stake into the ground out in the water the length of the chain, with the top of the stake just below the surface, and over this put the ring, so that the otter can swim about when he is caught, which will prevent him gnawing his leg off. Set it also with the jaws opened across his landing place and then sift some mud over the trap and the chain so that they cannot be seen, and smear some over the stake and the ring. As the object is to catch him as he comes ashore, no bait is needed. One advantage of setting an otter trap in the water is because it is not apt to be sprung by any other animal; another advantage is that it can be visited in a boat and no scent be left.

If you make a land set a good place to put the trap is where a slide begins, as the otter will then be in a walking position, or along the side of the slide where one of his legs will press against the pan as he goes down. Never put it on the slide itself. In setting the trap dig away the earth with the blade of your hatchet, and cover it with dry evergreen leaves, moss or rotten wood broken very fine, being careful to smooth the earth over so that nothing appears unnatural. Be also careful that nothing is on the

pan to prevent the jaws gripping firmly when sprung. Another good land set is to put the trap where he makes his excretions, as this strange animal always has some particular place where this is done, and will often travel a long distance in order to go to the same place. If all this excrement is not in one spot, gather up the accumulations, and put them where the largest pile is, setting the trap about a foot in front of the heap on the side where the tracks are.

When trapping otter in the winter, if you find a place where he uses a hole through the ice, fasten the



Otter Tracks on Snow

chain to a heavy stone for an anchor, and lower both the trap and the stone into the water. If the water is shallow you will need no bait, as the otter springs the trap while getting out of the water. If the water is deep bait the trap with a piece of fish fastened to the pan, the otter this time being caught by the head. Another way is to bury the trap where he slides when travelling over the snow, and because it is always difficult for him to get through the snow he will not leave the old furrows which he has made if he can avoid it. In putting the trap in one of these furrows see that the snow looks as much as possible like the rest of the slide. This is not, however, a very satisfactory way of trapping an otter, as he is generally on

to the trick, but as he has strong objections to making a new path he can sometimes be caught.

When making a land set always fasten the chain to a spring pole, and when setting your trap always wear gloves and never touch anything which can be avoided.

Although as a rule otter will not eat bait they will smell it over, which is just as good.

Decayed meat, or better still, decaying fish, will often attract them, especially if it is placed upon a bush or in any unusual place, but remember that although they are inquisitive creatures the bait must excite their curiosity and not alarm them.

If you will always take time to smoke your traps before leaving camp, you may be able to take home to your wife or favorite sister a coveted boa.

Only visit a trap once in two or three days and only go near enough to it to see if it has been disturbed.

Trapping for Muskrats

Muskrats are found on sluggish streams and ponds bordered with grasses and flags upon which they largely live. From the roots of these flags they build dome-shaped houses along the shores of marshes, which they enter from under the water. Here they live during the winter in families of from six to ten, in the summer time living along the banks in hollow trees or under overhanging roots.

Although they are nocturnal in their habits they are constantly seen swimming about in the day time. They are easy to trap, the usual way being to set the

trap on a piece of dead wood sticking out from the shore into the water. If you set the trap on the shore where there is a muskrat slide, put the ring over a stake driven into the ground in deep water, and then drive down another stake just beyond it so that the muskrat in swimming about gets the chain twisted around the two stakes and drowns. For bait use fish scented with musk or fish oil. Often when a trap is set on a log a piece of white alder whittled off so that the white color will attract his attention, is all that is necessary.

Trapping for Beaver

Beavers belong to the same family as muskrats and are practically muskrats on a larger scale. They are divided into two varieties, dam beavers and bank beavers. The dam beavers live in houses similar to muskrat houses, but larger and stronger, the dams being built to get a sufficient supply of water to surround these houses. The bank beavers live on the banks of streams and ponds, in holes lined with grass and leaves, their houses being entered like the dam beavers three or four feet under water. Both varieties have the same characteristics, and feed almost entirely at night. In the spring they leave their houses and during the summer roam about, feeding on aquatic plants, various kinds of herbage, and such berries as grow near their haunts. In travelling about they have particular routes which they follow, and on their return in the autumn repair their houses, and rebuild their dams. At this time they fell

with their sharp teeth, willows, aspens, poplars, birch, and alders for food during the winter, which they cut into short lengths and sink in the water near their homes, taking them into the houses to eat as needed.

When trapping beavers, find a feeding ground some distance from a beaver dam where branches and trunks of trees have been cut into short lengths, and then locate the beaver path leading to the water. In the shallow water where the beavers get ashore set your trap, going there either in a canoe or by wading along the shore, as the beaver is a shy animal and afraid of human scent or signs. Be sure not to molest anything near the bank, and if you touch the shore sprinkle the place with water. In setting the trap take care to set it so that the beaver will be drowned at once or he will alarm the others and they will abandon their houses and leave the locality. A good way to set a trap is to fill a meal sack two-thirds full of stones and then twist the top of the sack through the ring on the chain, doubling it back and tying it so that the ring cannot slip off. Then get a pole the size of your wrist at the butt and drive the staple of the chain into the end of it. Set the trap in shallow water where the beaver path is, and sink the pole by putting the sack of stones on top of it the length of the chain further out in the water. The trap, sack, and pole, being under water, will not attract the beaver's attention, and when he is caught and drags the trap into deep water you will be able to find him by the pole, the end of which will rise to the surface when the sack of stones is off it. After setting the

trap dig some mud out of the water with your paddle and cover the trap with it. Also sprinkle beaver musk on some mud and lay it on the beaver path or slide.

Beavers are also caught by breaking away a part of their dam a few inches below the surface while the beavers are in their houses during the day, and then setting a trap there. As they send sentinels out at night to watch these dams the break is detected, and if the trap is properly set a beaver is almost sure to be caught, but as the capture of one generally frightens away the others few trappers try to get them in this way. In the winter time they can also be caught by setting a trap where they keep their supply of wood. This is done by driving into the ground two rows of sticks which lead to the trap, and then covering the hole which you have cut through the ice with brush and snow.

Trapping for Skunks

Skunks are nocturnal animals and feed on worms, bugs, grasshoppers, frogs, mice, young birds, and birds' eggs. They are not crafty animals, and it requires no great skill to trap them. Look for them among rocks on some rise of ground or in a tangle of underbrush where there are holes, as they are lazy creatures and will take the nest of any animal already made, if they can find one, a skunk often killing a rabbit and living in its hole until hunger drives him out. Their prevailing color is black and white, some varieties being largely white, and others largely black,

and as they walk with their backs curved and with tails erect they are apparently proud of their beauty. If you find any black or white hairs near a hole look for droppings a little distance away and set your trap between the hole and the droppings. If you set your trap in a hollow log you need have no fear of putting your hand in to pull the skunk out, as he will neither bite nor discharge while in the log. But be sure to hit him across the back and close to the tail with a club when that part of his body appears. If a skunk gets caught in your trap the only thing to do is to approach him stealthily, giving him a sharp blow close to the tail to paralyze his muscles.

The way to clean clothing after a skunk has sprinkled them is to hold them over a fire of red cedar boughs, and then bury them for a few days or bury them wrapped in fresh hemlock boughs.

Trapping for Foxes

The fox belongs to the wolf family and is carnivorous in its habits. Of the six varieties in the United States the red fox is the most common, and the silver gray and black fox the most valuable, all the different varieties being about the same size and having the same habits. They live in burrows often stolen from other animals, or in crevices between rocks, and bring forth their young, from three to nine in number, generally in March. They feed on grouse, small birds, rabbits, squirrels, mice, fish, and eggs and are particularly fond of wild grapes, strawberries and other ripe fruits. In getting their prey

they generally creep up stealthily to within springing distance, but often pursue it with "the long chase," as they are fast runners. Their senses of sight, smell, and hearing are remarkably acute, and in natural cunning, both in escaping danger and in securing prey, they show something very near to what we call reasoning powers.

When setting a trap for a fox select a wet, boggy place. First, put some turf steps about a foot apart some distance into the bog, and at the end of these steps put a bird which you have shot, and in place of the third step from the end set the trap, putting a thin piece of turf on the pan, so that this step will look like the others. On the dry ground on the edge of the bog where your steps begin put some mice droppings, if you can find any, otherwise use fish oil for a scent, and from here make several trails back into the woods in different directions, doing the same thing along your line of steps. If the fox strikes the trail he will follow it up, and when he comes to the boggy ground will use the turf steps as stepping stones, as he is always careful not to step in water. Finding that the first step holds him, he will use the others, as they are the right distance apart for his gait, and he steps on the turf concealing the trap. Of course, this sounds logical and simple, but if you go to your trap several times without finding Reynard there don't show in your face anything but Christian resignation, as Mr. Fox is a very intelligent member of the community.

Another way is to put a piece of turf on the edge

of some stream, then a second turf on the pan of the trap, and then the bait on a rock further out in the stream. If you come across a spring where the tracks show that a fox goes to drink, place the trap an inch under water, cover the pan with a piece of moss which is just above the water, and then put some bait just beyond in such a position that the fox in reaching for the bait will step on the moss.

Another way, if you are camping out in the fall, is to make a bed of dry grass or leaves two or three inches deep in some opening in the woods. As a fox has a depraved appetite for mice, if you can find any mice droppings scatter them about in the grass. Then, for several days throw bits of meat of various kinds or fried meat covered with honey onto these leaves or grass, but do not set your trap until the fox gets into the habit of visiting the place. When you get tired of feeding him, smoke two or three traps with feathers and hide them in the grass. In making these preparations always wear gloves, and always take the same path, never stopping or turning around when you throw your bait into the grass, but making a circle which brings you back to camp, as these shy animals are on the lookout for any suspicious movements. Don't get discouraged if a fox does not show up. If you will have enough patience it will only be a question of time before he will go into the grass for the bits of meat. He only wants to have a good think about it, and, provided he does not see anything to make him suspect you have anything to do with the bait, you will probably get him.

Suggestions About Trapping

If you will use common sense and do nothing unnatural you will find that animals are not as shy as you think they are.

When trapping set your traps in a circle, following lakes, rivers and small streams, so that in going from one to another you get back to the starting point.

Always wear moccasins so that you will not make marks on the ground with your feet, and always take the same route in going to your traps.

Test the springs on a trap before setting it, and when you set it see that there are no twigs on the pan.

For land animals put your trap where the runway of the animal goes through the thickest part of the woods, also where you can inspect it without any difficulty.

Don't keep pulling up a trap and trying other places. Find a good place to put it and let it remain there.

As an animal will often visit a trap a dozen times, smell it over and then go away because it has become suspicious, you may have to go to a trap the thirteenth time before you will find anything in it.

Never get dried leaves, dirt, or rotten wood, to cover your trap with, near where you set it.

In cold weather never cover your trap with rotten wood, as it freezes easily and clogs the jaws.

If you come across feathers or the remains of a meal take them with you to cover the trap, or set your trap where they are.

Never set a trap at the entrance to a hole. Get it well into the hole and well covered, or the animal will see the fraud.

If you find your bait is gone, and the trap still set don't disturb the trap, but put your bait on the other side of it. If, however, your trap is sprung, set it somewhere else near there.

To know positively if you have found a good place to set a trap leave some bait, and see if it is gone in the morning.

Never let your trap remain too long without cleaning it, as it will get an iron smell of which animals are suspicious.

When you have trapped an animal clean the trap with sand and water, and then smoke it before resetting it.

After you sink a trap in the ground be sure that the surface of the ground is level with the rest of the ground.

Always use fresh bait when resetting your trap. Cut the old bait into small pieces and scatter it along the route of your traps.

Never set a large trap without a trap clamp, and never put your hand on to the pan of an open trap.

If you get an animal in your trap reset it in the same place after scouring and smoking it.

Dry all skins in the shade, first scraping off the fat, which heats and spoils the hide. Don't roll them up when dried but keep them loose and flat.

If a deer gets his foot caught in one of your traps,

and carries it off, you may be sure that he will soon lie down to push it off. Find the place, therefore, where the deer lay down, and hunt for your trap there.

Remember that the golden rule in trapping is patience. Try it.

Getting into an Unfrequented Country

CHAPTER XV

SOME SUGGESTIONS ABOUT CAMPING OUT

Don't go on a camping trip if you have a surly streak in your makeup or are a lazy man.

Don't go into the woods if there is something on your conscience which keeps it pricking, as nature is sure to get you on to bed rock principles.

Tump-line and Load

Don't hesitate to make a camping trip because you think it will cost too much. No trip costs less. Nature supplies most things free—wood, water, food, and privacy.

Make up your mind that the man who spells queerly when he writes to you and bears down heavily with his lead pencil is the man you want for a guide.

Don't forget that old clothes well-patched and clean are as good as new ones. Don't take any clothing with bright or white colors. Woollen clothes, dark gray in color and of medium weight, are the best.

Don't forget that two flannel shirts are better than two overcoats.

Remember that sixty pounds is all that any man can carry. More is making a pack mule of him when the weight of an hour is piled on top.

Don't take slippers or heavy boots. The lightest and easiest foot gear for the woods is deer or moose skin moccasins.

Don't take a revolver. A pair of light field glasses are more useful and less cumbersome.

If you get soaking wet don't let your modesty get the best of you. Take all your clothing off, wring them out, put them on again and keep moving. If you do this you will keep warm and will not catch cold.

Don't wring out flannels or woollens unless you are going to put them on. Hang them up dripping wet, and they will not shrink.

Never put wet moccasins near a fire to dry. If they get wet and have become hard by being allowed to dry too quickly the only thing to do is to wet them again and then smoke them. Nothing else will do. The best way to get an even color on them is to build a smoke house and smoke them slowly, or set a box or the camp kettle over a hole dug in the ground and then smoke them. To do it properly they should smoke for twenty-four hours. If they are wet and you haven't time to smoke them, scrape off the water with the back of your knife, then stuff them with brush which makes them keep their shape, and at the same time lets the heat get inside, and hang them up

some distance from the fire where they can dry slowly.

If the inside of your moccasins is wet take a handful of clean pebbles, heat them in the frying-pan, put them in your shoes and then shake them about.

Never dry snowshoes near a fire, as the heat takes the life out of the leather, and they soon wear out.

If your leg breaks through the ice rub snow on your trousers at once and it will absorb the water before it gets through them.

If you carry all your matches in one sack you may be sure that this sack will be the one which will get wet.

Don't leave your axe out of doors on a cold night, as the edge is apt to become brittle, and the first knot it comes in contact with will very likely take a piece out of it.

If you keep your head from getting hot and your feet dry there will be little danger of sickness. If your head gets hot put green leaves inside your hat.

Don't dive in strange places. Sharp rocks, or a jagged stick may be at the bottom, and water which looks inviting on top is often full of slimy weeds, which are difficult to get out of. When you go in bathing it is better to splash around than to take risks.

Don't lie down or sit down on the ground even if it feels dry. Sit on your hat, if there is nothing else to sit on, or squat, Indian fashion. All Indians know the danger of sitting on the ground, and army sta-

tistics show that one-half of all camp sickness is from doing just this thing.

Don't sleep with the moon shining on your face. You can get moon struck the same as you can get a sunstroke.

If your throat is parched, and you can get no water put a pebble in your mouth. It starts the saliva and will quench your thirst.

Don't let your axe get in the hands of your companion if he has never swung one, and don't lend him your gun unless you are willing to take chances that there will be no friction in the friendship.

Don't try to find out if your gun is loaded by shutting one eye, and looking down the barrel with the other.

Don't point your gun either at yourself or at any one else, and don't carry it so that it includes all your hunting companions in its range.

Don't change your gun if it is a good one. Change your methods of shooting. If you can't hit the bull's eye don't blame the gun. The fault is generally the man behind the sights.

Don't forget that guns often need resighting, especially new ones. A gun correctly sighted at the factory may not be properly adjusted for the man who is to use it, as the way of taking aim differs with different persons.

If you are off for a day's hunt test your cartridges by putting each one in your gun before you put it into your cartridge belt. You will not then get a misfit jammed into the barrel.

Getting Back to Civilization

Don't practise target shooting on a hunting trip. Wait until you are away from the haunts of game.

When shooting birds on the wing don't stop to consider what not to do, but only think of what you are to do.

If you will make it a habit to sight your gun on birds out of range it will give you good practice.

Don't forget to take the charge out of your gun when you come into camp. If you don't do it and it falls there may be an accident.

Clean your gun every night, but don't polish it enough to make it shine.

Don't leave your paddles, axe or gun where a hedgehog can get at them or he will gnaw the wood for the salt which your hand has left on it.

Remember that a hedgehog is a good barometer, as he always shows up when a storm is coming.

When putting your gun into a canoe don't do it in such a way that the trigger will hit against something and land a charge of shot in your stomach.

Never carry your gun by the barrel in cold weather, as it is liable to burst where your hand heated the steel when you fire it.

Don't approach game from the windward side. Always circle to the leeward.

Brush slanting across your path is easier lifted over your head and dropped behind you than pushed aside.

Don't aim carelessly or fire too quickly. Rattled, excited, careless shooting seldom counts. Deliberation and steadiness is what does the business.

The Front Sight

Don't ever fire until you are sure that it is not a human being, and keep in mind that hunters sometimes go on all fours.

Don't have the front sight too coarse and overshoot, which is the tendency of most sportsmen. Better too low than too high.

Headquarters

If you are to have good meat don't forget to draw the entrails of the game as soon as you kill it.

If you are cornered in the woods by some wild animal don't run as soon as you see four legs and a mouthful of teeth. Face him, and if necessary, dodge him. All animals are more or less afraid of man, and few will start a fight unless forced into it.

If you have no candles you can get enough light to prevent stumbling about in the dark by winding some pork rind around a stick, or standing a piece of

pork on end in a tin cup or saucer and then lighting it.

If your matches get wet carry them under your armpit until they get dry again, and they will light as well as ever.

Remember that distance in the woods should always be spoken of in hours, as the words feet, yards, and miles are useless ornamentations of civilization. Four hours away means something, but four miles away means nothing, as it may be four miles through a windfall.

CHAPTER XVI

SOME REMEDIES FOR SICKNESS OR ACCIDENTS IN CAMP

THERE is nothing so necessary to have in camp as a medicine case with medicines for the common cases of illness, and a small case of surgical instruments. If you do not take these with you get a pair of dressing forceps, a pair of dissecting forceps, a pair of surgeon's scissors, a surgeon's knife, some straight and curved needles, some silk thread, some prepared catgut, a No. 10 catheter, some bandages, gauze, cheese cloth, adhesive plaster, surgeon's soap, absorbent cotton, vaseline, safety pins, some two-grain quinine pills, some three-grain cascara pills for a cathartic, some camphor and opium pills for diarrhœa, and some corrosive sublimate tablets with which to make antiseptic solutions, using one tablet with a pint of water. In case of any serious accident or illness send at once to the nearest settlement for a

Taking an Injured Man Out

physician, first writing out as well as you can a description of the case, so that the doctor may know what instruments or medicine to bring back with him. Whatever the trouble is keep cool. Do not attempt to do much, but wait until the doctor arrives. If it is an accident, handle the person gently and quietly. Loosen his clothes, especially his collar and belt, and if he has fainted have his head lower than his feet. If he is vomiting put him on his side with his head low enough to prevent the vomited matter getting into his lungs. If his clothing covers the wound cut it where the seam is, and only remove enough to inspect the wound. If there is much bleeding, stop it before the wound is dressed. If stimulants are necessary give hot water, tea or coffee. Do not use any alcoholic stimulants unless he does not revive, and then give a teaspoonful of brandy or whiskey in a tablespoonful of hot water every minute or two. If the injury is on the head do not give stimulants of any kind.

Bites and Stings of Insects

Put on salt and water, or make a paste with soda and water, or rub the wound with a raw onion, or with ammonia, camphor, or tar soap, or make an ointment of three tablespoonfuls of tallow, two tablespoonfuls of camphor, and one teaspoonful of creosote. Put this in a tightly corked bottle, and use when needed. Another good ointment is made by mixing four tablespoonfuls of pine tar, four of castor oil or tallow, and one of pennyroyal. Let this sim-

mer over a slow fire until it has dissolved, and then keep it in a tightly corked bottle.

Bites of Non-poisonous Snakes

Apply salt and water, or plaster the place where the bite is with mud. There is no necessity for drinking whiskey. Cut it out—the whiskey not the wound.

Bites of Poisonous Snakes

Tie a piece of cloth above the wound to stop the circulation of blood and then suck the wound. This is perfectly safe to do if you have no cut in your mouth or do not swallow the poison. Then burn the wound with a red hot iron or cut it out with your knife. It requires nerve, but a life may depend upon it. Then take a strong drink of whiskey, apply ammonia externally, and inject into the rectum an enema of warm water and soap with two teaspoonfuls of spirits of turpentine added.

Bleeding (See Cuts.)

Bleeding at the Nose

Do not blow your nose. Hold a wet handkerchief at the back of your neck and wash your face in cold water, or place a wad of paper under your upper lip. Then throw your head forward and hold a sponge soaked in water at your nose. If these remedies fail, crowd some fine gauze or cotton into your nostrils and make a plug.

Blistered Feet

Wash them in warm water and then in alcohol or in cold water with a little baking powder or soda added. Wipe them dry, and then rub them with a tallow candle or some fat. If you do not wear clean socks your feet ought to blister. If you have a long tramp before you, soap shavings put into your socks are a good preventative for blistered feet.

Broken Bones

If a person has broken his arm or leg keep him perfectly quiet, after making him as comfortable as possible, and handle the fractured part as carefully as you would a delicate piece of china. Do not attempt to set the bone, but send for a doctor, in the meantime putting the arm or leg in a splint. (See Splints.) If the bone has made a flesh wound through the skin, or the bone has been broken by a rifle ball and there is a large flesh wound, cover the wound with cotton cloth or cheese cloth, which has been made antiseptic by dipping it in a solution of corrosive sublimate or in some boiling water to which baking soda has been added. Then wrap absorbent cotton around it before putting the splint on, wrapping the bandage around it in such a way that it will prevent the broken ends moving upon each other.

If the skull is broken put the person on his back in some shady place with his head and shoulders slightly raised and keep him absolutely quiet. If there is an open wound put some cotton cloth or

cheese cloth, which has been made antiseptic as above, loosely over it. If there is any fever put wet cloths on his head.

If the spine is dislocated lay the person on his back. Never put him on his side or face, or it may be fatal. If he is cold apply hot blankets to his body.

If the nose is broken plug it with gauze to stop the bleeding.

If the jaw is broken push the bone gently into place, and if there is an open wound cover it with gauze or cotton, made antiseptic as above, and then put a bandage around the jaw.

If the collar bone is broken the person will know it by a pain in his shoulder and by the shoulder dropping. By holding the elbow up it will relieve the weight from the collar bone. When you get him into camp lay him on his back on a folded blanket, but do not put a pillow under his head. If it is necessary to take him out of the woods put a cotton wad in his armpit and bandage the arm to the side of the body or put the arm in a sling.

If the shoulder blade is broken put the forearm across the chest with the fingers on the other shoulder, and then bandage the arm to the body.

If a rib is broken it will pain the person when he takes a long breath. Put him on his back, resting a little on the uninjured side, with something under his head and chest so that he will breathe easily. If it is necessary to move him bandage strips of adhesive plaster around his body, beginning at the lowest rib and working upward, having each strip lap over the

one below it. If you have no adhesive plaster use a wide strip of cotton cloth. After you have put his coat on pin it up as tightly as you can in the back.

If the leg is broken above the knee lay the person on his back, with his head and shoulders slightly raised. Draw the leg out straight, and after padding it with cotton or towels, cut a small sapling long enough to reach from the foot to the armpit, and fasten it at the ankle, the knee and waist. If it is necessary to move the person bind both legs firmly together.

If the leg is broken below the knee lay the person on his back and put a pillow lengthwise under it. Then put a board or a hewed sapling on the under side of the pillow to stiffen it, and bandage the pillow and the board or sapling firmly to the leg. If you have no pillow make one by stuffing a bag with grass. If the person has to be moved bind both legs together.

If the knee pan is broken put the person on his back, and straighten out the leg on a padded splint which reaches from the heel to the hip, putting some cotton or a towel under the knee and the heel. Then bandage the splint on at the ankle, at the upper part of the leg, and above and below the knee pan.

If the foot is broken make a splint of two pieces of wood held together at right angles, and after padding the foot with cotton, bind the splint to the side of the foot and the leg.

If the upper arm is broken make three splints, one long enough to reach from the shoulder to the elbow to go on the outside of the arm, one to go on the

inner side of the arm and one on the back of the arm. Pad the arm from the armpit to the elbow with cotton, towels or newspapers wrapped in cloth, and after bandaging on the splints put the forearm in a sling and bind the arm to the body.

If the forearm is broken use two padded splints long enough to reach from the elbow to the finger tips. Bandage one of these splints on the palm side of the arm and the other on the back of the arm, and then, after putting the forearm in a sling, bandage it across the body.

If the wrist is broken make a cotton pad long enough to reach from the fingers well up the forearm, and rest the palm of the hand on it. Put a similar pad on the back of the hand, and after bandaging on a splint put the arm in a sling.

If the hand is broken put a cotton pad on the palm, and over it a thin splint long enough to reach from the tips of the fingers to the forearm. After binding this splint in place put the arm in a sling with the hand higher than the elbow.

If a finger is broken make a splint of cardboard or a thin piece of wood long enough to reach from the tip of the finger to the wrist. Cover the finger with gauze or cotton, and after binding on the splint, support the hand in a sling.

If one of the joints is broken it is a serious matter, and must be carefully attended to. Put the injured joint on a pillow, moving it as little as possible, and after covering it with gauze or cotton apply wet cloths.

Bruises

If the bruise is a slight one wash it with cold water or arnica and water. If it is a severe one wash it with hot water, and cover it with gauze dipped in hot water. If it has given a shock to the system cover the person with warm blankets, and put bottles of hot water against his body. Then give him hot coffee or any hot drink which is not alcoholic.

Burns and Scalds

Use vaseline, baking soda, bread, the white of an egg, flour and water, butter, grease or fat, or mix flour and soda with fat, or soap with sugar and make it into a paste, or put a teaspoonful of baking powder into a pint of warm water, and pour it on to a piece of gauze and put this on the burn or scald, covering it with cotton and a bandage. If the burn or scald is a severe one, saturate the gauze with sweet oil, salad oil, olive oil, vaseline, or the white of an egg. If none of these are in camp sprinkle it with starch, flour, tooth powder, or cover it with moist earth or clay. If your clothes have caught on fire roll over on the ground until the flames are extinguished, or have some one put a blanket or a coat around you and smother the flames. Then have some one pour water over you to prevent any smouldering embers burning into your flesh. If any part of the clothing sticks to the body pour on lukewarm water after adding a little baking powder, and let the clothing remain until it comes off easily. Never let a burn

be exposed to the air but cover it at once, as the pain is intense, and if it is a large one dress only a small portion of it at a time.

Chapped Hands

Bathe the hands in vaseline, or in vinegar diluted with water, rubbing it well into the skin.

Chills

Mix pepper and ginger in hot water and drink it. Then get into bed with a bottle of hot water at your feet.

Choking

Force yourself to swallow pieces of dry bread or drink some water. If this does not bring relief push the substance down with a spoon handle or put your forefinger down your throat far enough to make yourself gag and throw it up. Getting on your hands and knees and having some one slap your back will sometimes bring the substance out of the throat. (See also Foreign Substance in the Throat.)

Colds

Drink plenty of ginger tea. Cover yourself well at night, take a quinine pill every two hours, and see that your clothing is warm in the morning. But better than any medicine is to get into bed with a bottle of hot water at your feet and stay there until the cold is gone.

Cold Feet

If your feet are sensitive to the cold put cayenne pepper in your shoes.

Colic

Put a bottle of hot water, or hot plates, or a mustard plaster where the pain is.

Constipation

Use cathartic pills, eat plenty of preserves and drink frequently.

Convulsions

Put the person into as hot water as he can bear, adding hotter water from time to time, at the same time rubbing the body to stimulate the blood and putting cold, wet cloths on his head.

Cramps

If the cramp is in the muscles of the leg rub the place where the cramp is vigorously, then straighten the leg out and bathe it in hot water. If the cramp continues get into bed and put a mustard plaster or a bottle of hot water where the cramp is, and another at your feet. If you are in the water kick out with your leg to extend the muscles. If the cramp is in your stomach put hot cloths, or a mustard plaster, or a bottle of hot water on your stomach and another at your feet.

Crushed Arm or Leg

Remove the clothing only where the injury is,

and then stop the bleeding if it is excessive. (See Cuts.) After this put several thicknesses of antiseptic gauze or cotton rather loosely on the injured part, and wrap it with bandages.

Crushed Fingers or Toes

Gently mould them into place. If a finger or toe hangs by a thread put it back in position and the surgeon may save it. Then cover it with antiseptic gauze and cotton and wrap it with a bandage, but not too tight, and put on a splint.

Cuts

If it is a slight one bind a piece of antiseptic cotton or gauze tightly around it, and after it has stopped bleeding loosen the cloth. If the cut is a severe one put the person on his back, and if it is on the arm or the leg elevate it. Wash the wound with a warm, antiseptic solution, and then press the edges of the wound together, holding the thumb, if possible, on the artery which supplies the blood. After the wound has stopped bleeding cover it with antiseptic gauze and bandage it. If you cannot stop the bleeding tie a strip of cloth or a handkerchief above the wound, and twist it. If this does not stop it bind another strip of cloth below the wound to stop the flow of blood coming that way. If an artery has been cut the blood will come out in spurts. In all such cases press with your thumb or forefinger directly on the wound to temporarily stop the bleeding. If the

wound is a large one crowd a wad of antiseptic gauze into it. If you are obliged to use a twisted bandage do not let it remain too long or there will be an arrest of circulation and gangrene may follow. With a twisted bandage the bleeding will usually stop in ten or fifteen minutes, when the bandage should be loosened. If the bleeding begins again, tighten up the bandage. When the bleeding has stopped give the person hot coffee, tea or milk, and keep him warm with hot bottles and blankets. Never allow an open wound to be exposed longer than necessary to stop the bleeding, and never cover it with anything which is not clean.

If the cut is on the scalp make a pad of antiseptic cloth or gauze and bind it tightly on the head, then press down in different places on the scalp with your thumb near the wound until you locate the artery, keeping your thumb there until the bleeding stops.

If the cut is on the temple press with the thumb on the bone just in front of the ear.

If the cut is on the leg or foot put the knot of the bandage on the inside of the groin and twist the bandage.

If the cut is on the palm of the hand cover a small stone or a piece of wood with cotton and hold it tight.

Diarrhœa

Do not use any remedies until you feel sure that the irritating substance which causes the diarrhœa

is out of your system. Then use camphor and opium pills which will relieve the pain and check too frequent movements of the bowels, or fire-brown a little flour and add to it two teaspoonfuls of vinegar and one of salt and drink it. For a simple case put a teaspoonful of vinegar and a teaspoonful of salt in a cup of cold water and drink it, or take a hot drink of ginger and water every few hours. Sometimes a teaspoonful of sweet oil will relieve the irritation. Don't eat any fruit or pastry. If you have dysentery, which usually follows severe cases of diarrhœa, stay in bed, and put a mustard plaster on your abdomen and another at your feet.

Dislocations

If a joint in a finger or toe is thrown out of position it can generally be put back by pulling on it and at the same time pressing where the dislocation is. If it cannot be pushed back use a splint, and after lifting up the hand or foot so that the pain from the pressure of blood will be lessened, apply cold cloths until a surgeon arrives. If the hip, elbow or shoulder is dislocated make the person as comfortable as possible and wait until the surgeon arrives.

Drowning

When a person is drowning, encourage him by telling him that you will save him and it may prevent him from getting demoralized. In rescuing a drowning person don't let him catch hold of you. Watch

your chance, seize him by the hair, and pull him over on his back. If he gets a dangerous hold on you strike him in the face, or push him under water, and keep him there, if necessary, until he becomes unconscious and his hold is loosened. When you get control of him hold him on his back with one hand, and with your other hand and your legs swim ashore.

As soon as you get ashore strip off his clothing from the waist up. Then lay him on the ground face downward, and tickle his throat with a straw or a feather, or slap him on his chest and the soles of his feet to get out whatever water may be in his lungs which interferes with his breathing. If this does not do it put him on his stomach across a log, or across your knee, or on a roll made of your coat, having his head lower than his body, with his forehead on his arm so that his head will be thrown back.

Cleanse his mouth of any dirt or mucus, and draw his tongue out with your handkerchief, holding it with your thumb and forefinger. This is important as it opens the windpipe. While you are holding the tongue roll the body gently from side to side to force the water out and relieve the pressure on the lungs. If this does not succeed have some one push several times against his sides with a forward movement.

After this turn him over on his back, having the log or the roll under his shoulders, the head thrown back, and the throat stretched out so that the air can

get into his lungs. Kneel at his head and start artificial breathing by folding his forearms across his stomach, then raise them over his head to a perpendicular position, then draw them back until they are straight out horizontally, then forward, then down to his sides, and then press them against his lower ribs to produce a bellows movement upon the lungs. Do not hurry, but take three or four seconds to each series of motions and don't give it up until you have worked for at least three hours, as persons have been brought back to life after that length of time. It is also well to excite breathing by putting smelling salts, camphor or ammonia to his nostrils and applying warm cloths to his feet. As soon as he shows signs of life rub him and then wrap him in warm blankets. After this give him brandy or spirits in small doses to encourage circulation, but be careful not to strangle him.

Remember that if you yourself are in danger of drowning the first thing to do is to lie on your back and let your head sink until only your nose and mouth are above water. If you work your hands like paddles, and kick with your feet you can stay above water for several hours even with your clothes on. It simply requires a little courage and enough strength of mind not to lose your head. If you can get hold of a board or anything floating in the water you can keep your head above the water without turning on your back, by holding on to it and only keeping enough of your head out of water to be able to breathe, as the human body, when under water,

weighs little more than a pound. If you will do this you do not need to be an expert swimmer.

Earache

Put a few drops of warm oil in the ear, or syringe it out with warm water, and then put in a piece of cotton. If there is something in the ear, jump up and down on one foot with your head bent well forward. If an insect gets into the ear, syringe the ear out with warm water. Sometimes the insect will come out if you hold a lighted match or candle close to the ear.

Emetics

To produce vomiting push your forefinger as far down your throat as possible, and if necessary repeat this several times. If this does not do it and you have nothing better use gunpowder dissolved in water, or a teaspoonful of salt or mustard in a cup of cold water. Take two or three drinks of it and then twice as much warm water. Sometimes a person can be made to vomit by tickling his throat with a feather. When a person is vomiting support his head with your hand and hold it well forward so that the vomited matter will not be swallowed again.

Enemata

Inject into the rectum warm water and soap.

Inflamed Eyes

Put a few thicknesses of cloth wet in cold water on the eyes and change them frequently, or put hot

tea leaves or raw fresh meat on your eyes when you go to bed, and then tie a handkerchief over them. In the morning wash your eyes with warm water.

Fever

Take quinine pills, get into bed and keep warm, but do not have enough covering over you to get heated. Eat nothing. The principal thing is to keep warm and dry. Keep the bowels open in the same way as for constipation, and drink a little milk.

Foreign Substance in the Eye

This can often be removed by rubbing the other eye in order to make both eyes water. If the speck can be seen it can generally be taken out by twisting a small piece of gauze or cloth around a toothpick and drawing it over the speck, or by twisting up a piece of paper like a lamp lighter, and after wetting the tip of it wiping it against the speck. If the foreign substance has left an irritation put a teaspoonful of salt in a pint of warm water, and wash the eye with it. If the substance is under the eyelid where it cannot be seen, sometimes a grain of flaxseed put under the lid will remove it. If this does not do it and it is under the upper lid roll the eye around after pulling the lid down and out, and if it is under the lower lid lift the lid up and out. This makes the tears flow and often washes the particle into the corner of the eye or on to the edge of the lid where it can be removed. If this does not succeed turn the lid over a match or tooth-pick, so that you will be able to see the speck.

Foreign Substance in the Flesh

Put the point of your knife under it and draw it out with your thumb or forefinger. Be sure that no part of it has broken off and is still in the wound. If a porcupine quill gets into your flesh put kerosene oil on it, as it kills the quill and prevents it working further in.

Foreign Substance in the Nose

Blow your nose vigorously, keeping the nostril which is clear closed. If this does not succeed tickle your nose and make yourself sneeze, or take a long, full breath, and then have some one give you a sharp slap on the back between the shoulders, or push it back through the nose and cough it out.

Foreign Substance in the Throat

Slapping the person on the back, while he bends forward with his face well down, will often dislodge whatever is in the throat; or have the person lie face downward, and after lifting him, so that his feet are higher than his head, slap him on the back. If the substance can be seen push your finger down his throat, and try to get hold of it. Even if you cannot get it, it will often produce vomiting which will expel it. (See Choking.)

Frost Bites

Do not go into a warm room until you have rubbed the part which is frozen with snow or ice water and

restored the circulation. If you get so chilled that you feel drowsy beat yourself unmercifully with a stick, and if there is some one with you beat each other. At all hazards keep awake. If you fall asleep it is certain death.

Gunshot Wounds

Place the person in a comfortable position and with a pair of forceps take out all dirt, bits of clothing, splinters of wood or gunpowder. Then dip a cotton wad into a quart of water to which a teaspoonful of soda has been added or make a suds of cold water and medicated soap, and squeeze it out over the wound so that the water will trickle on it. Replace any torn flesh and push the wound together as well as you can. Then put over it some antiseptic gauze and bandage it as soon as possible, as it is important not to get any germs in it. Never take any stitches. If the wound is on the head rest it upon a pillow or on a blanket covered with a clean towel. If it is on the arm put the arm across the chest and support it in a sling. If it is on the leg rest the leg on a pillow or blanket. If it is on the chest raise the head and shoulders on a pillow or blanket, so that the person can breathe easily. If it is on the front of the abdomen have the person lie flat on his back with his knees drawn up. If it is on the side of the abdomen turn him a little toward the uninjured side.

Hiccoughs

Take a deep breath, and hold it as long as possible or make yourself sneeze. If it is a severe attack

Starting for Home

put a mustard plaster, or a cloth moistened with hot vinegar and brandy or whiskey on your stomach.

Poison

Remember that poisons are divided into, first, irritating poisons, or those where the symptoms are wholly where the irritation is; second, general poisons, where the whole system is affected, and there is also a local irritation; third, general poisons, where there is no local irritation; and fourth, narcotic, or sleep producing poisons. In the first and second class of cases, if it is an alkali poison give diluted acids, such as vinegar, to neutralize the alkali, and diluted alkali, such as soap, to neutralize an acid poison. After this have the person drink some oil, a raw egg, or flour and water. Then give opiates to stop the pain, and whiskey or brandy for any weakness. In these cases it is best not to make the person vomit. In the third and fourth class of cases have the person vomit repeatedly. (See Emetics.) Then give him strong coffee or other stimulating drinks. In narcotic poisoning use every means to keep the person awake, and if the person cannot swallow force some strong coffee into the rectum with a syringe.

For ivy poisoning mix some baking powder with water, or make a strong lye from wood ashes and use it as a wash, or rub on wood ashes. Another remedy is to boil black-spotted alder bark in water, and then bathe the affected part with it.

For poisonous mushroom give an emetic, then take a large dose of castor oil, and stimulate the blood

with whiskey or brandy. The symptoms of this poison are pains in the stomach, purging, dilated pupils, muscular weakness and mental excitement.

For poisonous fish use the same remedies as for poisonous mushroom.

Snow or Sun Blindness

Smear your face about the eyes with charcoal.

Sore Throat

Gargle the throat with hot water with some salt added, and then bind a piece of flannel or a woollen sock around it, keeping the flannel or sock on until the soreness is gone. Tincture of iron diluted in water and gargled is also a good remedy, or a teaspoonful of chlorate of potash in a cup of water.

Splints

If you have no boards or cigar boxes make your splints of twigs. In using a splint have it narrower than the injured member, and give it shape by padding it with grass, cotton, pieces of cloth, or newspaper. If the upper arm is broken bind the arm to the side of the body, and if a leg is broken bind the leg to the other leg, after putting on a splint. In putting on a splint be careful not to bandage it so tightly that it interferes with the circulation, also keep the tips of the fingers and toes uncovered so that you can feel of them occasionally to know if the circulation is good. If the splint causes any pain you may be sure that it is put on wrong.

Sprains

Bathe a sprain in as hot water as you can bear, or have some one stand above you and pour cold water on it. After this wrap a flannel around it soaked with hot or cold water, or put a cloth saturated with arnica and water around it and then cover it with dry cloths. As soon as the swelling begins to subside bandage it and keep the joint quiet. If the ankle is sprained keep the foot in a raised position on a pillow. If the wrist or elbow is sprained support the arm in a sling. If the knee is sprained bind on a splint.

Sunstroke

The first symptom is a headache followed by a heavy feeling in the pit of the stomach, dimmed eyesight, difficulty in breathing, and a fever. If insensibility follows lay the person on his back in a cool, shady place, with his head slightly raised. Loosen his clothing, keep his head cold with wet cloths, and pour cold water on his face and chest until the temperature of his body is lowered and the face becomes pale, or put him in a tub of hot water. Then rub him thoroughly, and give him stimulants.

Transporting a Wounded or Ill Person

The common way is to make a chair by two persons taking hold of each other's wrist after each has taken hold of his own wrist with his other hand, or clasping hands and putting the other hand around

the other person's neck. Another way is to tie two blankets together, having the knots on the shoulders of the two bearers. Another way is to take two coats, and after buttoning them up, run two poles through the sleeves. This makes a good stretcher for the man to lie down on or to sit on with his back against the man walking in front.

Toothache

Hold a clove in the mouth, or some warm vinegar to which salt has been added, or sprinkle some pepper and ginger on cotton and put it in the cavity.

Unconsciousness Caused by an Injury

Lay the person on his back and loosen his clothing. Unless the injury is on the head give him hot brandy or whiskey with water, a teaspoonful once a minute for ten minutes. If he still remains unconscious put hot cloths, bottles of hot water, or hot stones wrapped in cloths at his feet, pit of his stomach, and in the armpits. Be careful not to burn him, which one is very apt to do. If the unconsciousness is from a blow on the head lay the person on his back with his head a little raised. Put warm cloths around the body if he is cold, and cold cloths if he is hot. Use no whiskey or other alcoholic stimulants. Smelling salts may be held to the nose. When the person begins to recover give him tea or coffee, but see that it does not get into his lungs.

Vomiting

Have the person lie down and give him as much hot water as he can drink in order to wash out his stomach. If the vomiting does not stop after this put a mustard plaster on the pit of his stomach.

Waiting for the Train

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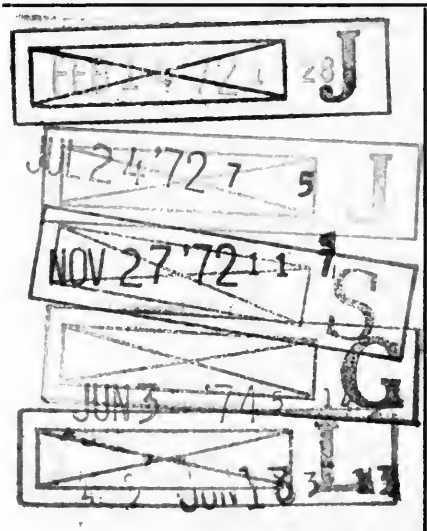

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